WEST VIRGINIA GEOLOGICAL SURVEY

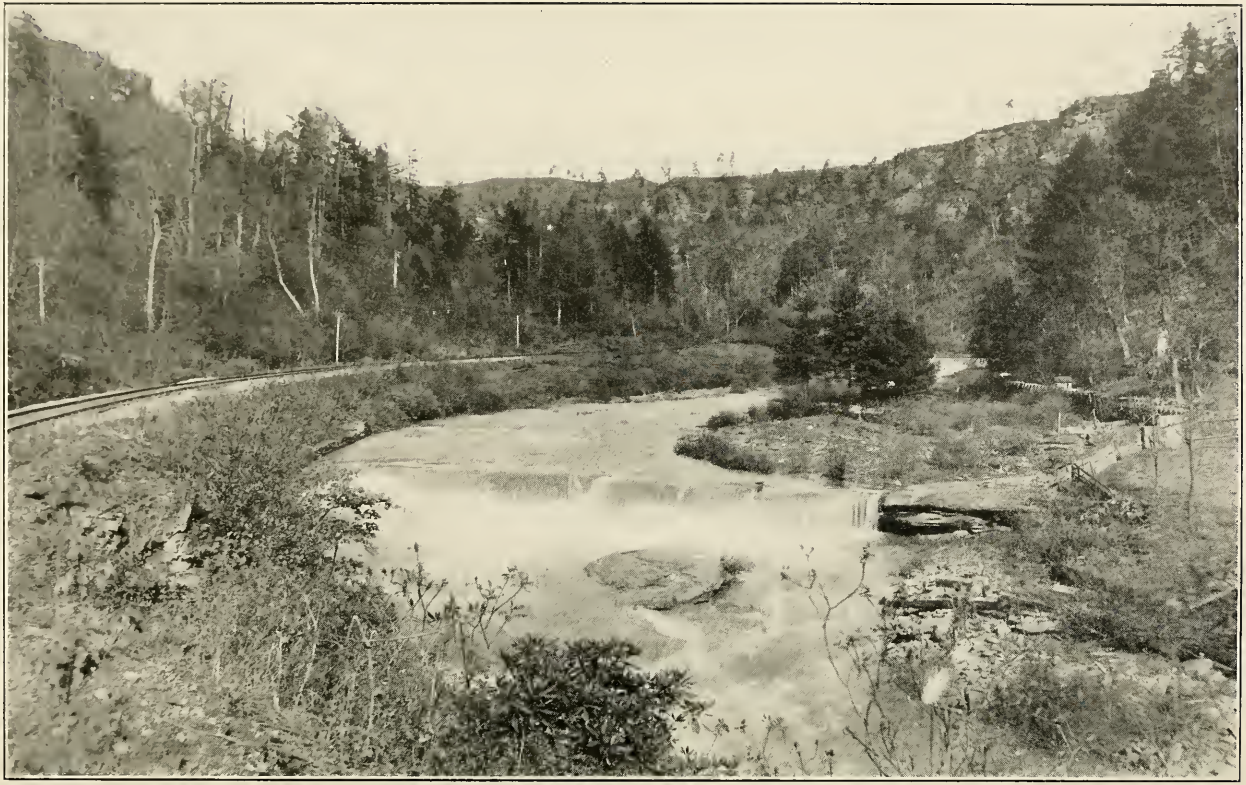

PLATE I.—Falls in Piney Creek at Whorley; showing outcrop of New River Group and Raleigh Sandstone just below sky line.

WEST VIRGINIA

GEOLOGICAL SURVEY

Raleigh County and the Western Portions of Mercer and Summers Counties.

By

CHARLES E. KREBS, Assistant Geologist,

Aided by

D. D. TEETS, JR., Field Assistant.

I. C. WHITE, State Geologist.

WHEELING NEWS LITHO. CO.
WHEELING, W. VA.
1916

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LETTER OF TRANSMITTAL.

To His Excellency, Hon. Henry D. Hatfield, Governor of West Virginia, and President, West Virginia Geological Survey Commission:

SIR:

I have the honor to transmit herewith the Detailed Report and the topographic and structural maps covering Raleigh County, the portion of Summers lying west of New River, and the portion of Mercer in which valuable coal deposits exist, prepared by C. E. Krebs, Assistant Geologist, aided by D. D. Teets, Field Assistant. The soil report including a soil map covering Raleigh County was published by the U. S. Bureau of Soils, a few months ago, and an edition of 2500 copies of the same was purchased from the Public Printer for $223.79, a sum less than half what it would have cost the Survey to reproduce the same. A copy of this soil report and map will be enclosed in the carton with each copy of the geologic report and case of topographic and geologic maps. The complete topographic map of Mercer County is published, and the stone will be retained by the engraver until the remaining portion of Mercer County's geology can be studied, and published, probably in connection with the remaining portion of Summers County, or that lying east from New River.

Raleigh County is very rich in coal, probably containing a greater thickness of coal beds in one mountain, 1750 feet in height, near Dorothy, than in any other portion of the great Appalachian field, as may be seen from the vertical section measured there by Messrs. Krebs and Teets who have assembled the data for this volume with their usual skill and ability. The Kanawha Group of coals probably attains its maximum development in this county, while the New River Group is also at its best, the county seat (Beckley) of Raleigh having given its name to one of the most important of the New River beds, and the coal area of Mercer contains a fine development of the underlying Pocahontas Group of coals in which the famous

No. 3 bed attains a splendid development, and which can be followed by means of surface exposures and bore hole records eastward through Raleigh and western Summers until it practically disappears from the section at the longitude of New River.

The accurate maps, sections of coals, analyses, description, etc., included in this volume, can not fail to prove of immense value as a permanent reference for information on every subject connected with the economic and industrial development of the area in question.

The paper of Dr. Wm. Armstrong Price, Volunteer Paleontologist, printed as Part IV of this volume on the fossil animals of the Pottsville Series, is of very great scientific as well as of practical economic value, since facts of this kind furnish valuable data for the correlation of coal beds from one region to another where direct stratigraphic tracing may be impossible. Hence this contribution of Dr. Price, given to the State as a "labor of love" is of much economic importance.

I. C. White,
State Geologist.

Morgantown, August 1, 1916.

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Map II.—Showing General and Economic Geology and Structure Contours on the No. 3 Pocahontas Coal, of western Mercer County.

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AUTHOR'S PEFACE.

The general purpose of this report is to assemble the present knowledge, including a large amount of unpublished data collected by the writer, his assistant and others in the field, not only of the general geology of the counties, but also a brief history of their settlement and growth, along with a description of the physiography and economic resources, and to present the facts in a form convenient to those who are interested in their study either for scientific purposes or for development.

The Report gives (1) A brief history of the counties and their development; (2) A study of their drainage system and other surface features; (3) The geologic structure with a contour map of the base of the Eagle Coal in the northern part of the area, the base of the Sewell Coal in the central part and the base of the Pocahontas No. 3 in the southern part of the area; (4) Four Chapters on the general geology and detailed stratigraphy, with a map showing the outcrop of the different divisions of the rock column, according to the generally accepted classification of geologists; (5) A description of the oil and gas possibilities therein, with suggestions for their future development, along with a map showing the accurate location of the dry holes drilled; (6) Minable coals, with a table showing the chemical composition, calorific value and fuel ratio, with a summary exhibiting the approximate available tonnage of the Counties; (7) Clays, road materials, building stones, sands, forests of the counties; (8) An Appendix showing railroad and U. S. Geological Survey levels above tide at numerous localities in every portion of the counties.

Special attention is called to the structure map accompanying this Report, whereon are shown by means of contour lines the tidal elevations of the Eagle Coal, the Sewell Coal and the Pocahontas No. 3 Coal. These contours exhibit at a glance the approximate horizon of these coal beds in the three counties, also the direction and location of anticlines and synclines,

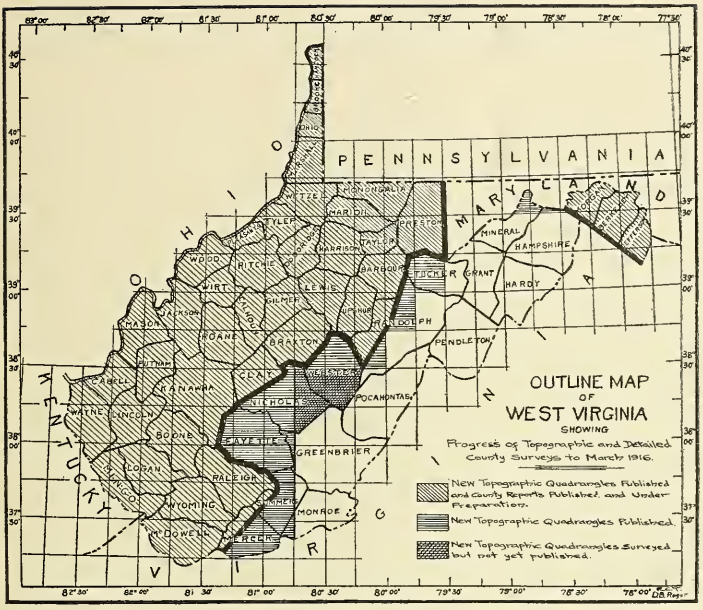

Figure 1.—See explanation on figure.

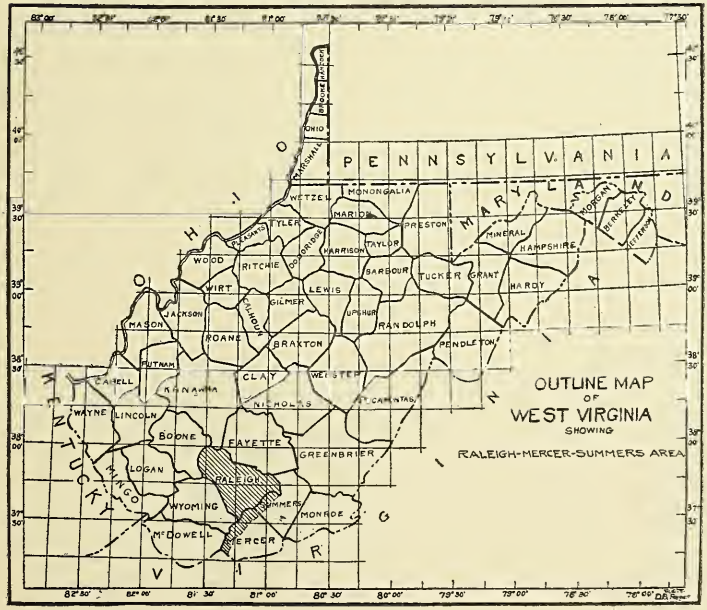

Figure 2.—See explanation on figure.

as well as the **dip** and **strike** of the rock strata at any point, a knowledge of which is of great value for the future mining of the several coal seams.

The chapters on coal give the general distribution of the several minable beds along with approximate estimates of the available area and tonnage of each vein, with a final summary of the total available coal for the counties. The commercial mines and openings are referred to in the tables of analyses therein by serial numbers, the same corresponding to numbers assigned to the symbol designating the approximate location of the mine on the maps referred to above.

Two sets of maps of the area (one of Raleigh and western Summers and the other of Mercer) accompany this Report (Maps I and II in Atlas under separate cover), one of which, (Map I), shows by appropriate symbols the character of the surface, the roads, streams, railroads, etc.; the second, (Map II), by the same means, the general and economic geology, with several items of special economic interest.

The writer and his assistant, D. D. Teets, Jr., spent a portion of the field season of 1914, gathering data for this volume, and opportunity is here taken to mention that the accurate, painstaking and faithful discharge of all duties assigned to Mr. Teets, both in the office and in the field, has been of great asistance in the completion of this Report.

Much valuable aid and assistance were given by residents of the area, as well as by officials of the several companies engaged in the development of the coal fields therein, and the records of the diamond core test holes furnished. Due credit and acknowledgment have been given in the text for all such data obtained.

The chemical analyses and heat determinations were made in the Survey Laboratory by Jan B. Krak, Assistant Chemist, under the supervision of B. H. Hite, Chief Chemist, and some work was also done by W. L. Linton.

The writer also takes the opportunity to express his obligations to Dr. I. C. White, State Geologist, whose writings and suggestions have added greatly to the value of this Report.

C. E. KREBS.

Charleston, W. Va., Jan. 1, 1916.

ERRATA.

Page 56, line 11 from bottom, for "Coal, Lower Chilton," read "Coal, Little Chilton."

Page 61, line 30 from bottom, omit "Coalburg" after "Coal blossom" at 171′ 0″ in Dry Creek Section.

Page 124, 4th line above Harper Section, for "Colleries," read "Collieries."

Page 167, 23rd line from bottom, for "Richland District," read "Richmond District."

Pages 195 and 197, in columnar heading, for "Pocahontas No. 1 Coal," read "Pocahontas No. 6 Coal."

Page 249, line 11 from bottom, for "E. J. Berwind Core Test No. B-80 (81)," read "E. J. Berwind Core Test No. B-8 (81)."

Page 370, line 15 from bottom, for "Virginia," read "Virginian."

Page 641, 7th line from bottom, under Averages of No. 3 Pocahontas Coal, for "R," read "M."

PART I.

History and Physiography.

CHAPTER I.

HISTORICAL AND INDUSTRIAL DEVELOPMENT.

LOCATION.

That portion of the State of West Virginia discussed in this Report includes Raleigh County, two districts (Jumping Branch and Rock) of Mercer*, and one district (Jumping Branch) of Summers*. The area lies between the parallels of 37° 15′ and 38° North latitude, and the meridians 80° 50′ and 81° 35′ West longitude from Greenwich.

GENERAL DESCRIPTION.

Raleigh County.

Raleigh County lies south of Boone, Kanawha and Fayette, being bounded on the east by Fayette, Summers and Mercer; on the south by Summers, Mercer and Wyoming, and on the west by Wyoming and Boone Counties. It began its existence in January, 1850, having been formed from Fayette by legislative enactment, and named in honor of Sir Walter Raleigh.

*Whenever the names of Mercer and Summers are used in this Report, it will be understood that reference is made only to the districts named in these two counties.

Raleigh, as first formed, had the following boundary lines:

"Beginning where the county line between the counties of Mercer and Fayette strikes New River, thence down and along said river, with its meanders, to the mouth of Salt Lick Run, near Isaac Sanner's, thence a straight line to the top of the dividing ridge between the waters of Paint Creek and Coal River, crossing Paint Creek at the upper end of Jackson Jarrell's plantation, thence with and along the top of said dividing ridge westwardly, to the dividing ridge between Coal River and Cabin Creek, and with and along the top of the same to the Boone County Line, thence with the Boone County Line to the end of the Great Cherry Pond Mountain, thence with and along the top of the dividing grounds between the waters that flow into the Marsh Fork of Coal River and New River on the one side, and those that flow into Little Coal and Guyandot Rivers on the other side, to the present line between the counties of Fayette and Mercer, and with said line to New River at the beginning."

Area.—Its area, given by districts, computed from the accurate topographic sheets of the United States Geological Survey, is as follows:

Districts.	Square Miles.
Clear Fork	77.80
Marsh Fork	94.95
Richmond	41.96
Shady Spring	131.41
Slab Fork	101.23
Town	96.01
Trap Hill	57.53
Total	600.89

Relief:—The general surface of the County varies in elevation from 820 feet above tide, where the County Line crosses Coal River at Jarrolds Valley, to 3,566 feet above tide at the summit of Huff Knob, on Flattop Mountain, in the southern part of the County, on the Raleigh-Mercer County Line, a range in elevation of 2,746 feet.

Population.—The population in 1900 was 12,436, of which 12,076 were white, 360 colored, and 33 foreign born. The census of 1910 gives the total population as 25,633, an increase of more than 100 per cent. in ten years. This increase is due to the fact that a large number of coal mines has been opened in Town and Slab Fork Districts.

The following table shows the change in population of the County by districts during the last twenty years, as given by the Census of 1910:

Districts.	1910	1900	1890
Clear Fork	2,400	1,227	1,063
Marsh Fork	1,987	1,781	1,539
Richmond	1,220	1,266	986
Shady Spring	3,887	2,334	1,586
Slab Fork	2,896	1,060	951
Town	10,407	3,357	2,305
Trap Hill	2,836	1,411	1,167
Totals	25,633	12,436	9,597

The figures given above show that the population has increased nearly 300 per cent. in the last 20 years, the largest part of this increase being in Town District, due to the fact that Town District contains Beckley, the county seat, and also that several large coal mines have been developed in this district.

Products.—The farming land of Raleigh County is well adapted to both tillage and grazing. Its area is very rich in coal deposits and the County is one of the foremost mining districts of the State. It formerly contained one of the heaviest stands of timber in the State, and still possesses several large tracts of virgin timber.

Petroleum and natural gas have, thus far, not been found in the County. Its principal products are corn, wheat, oats, hay, beef cattle, sheep, hogs, poultry, fruits of many kinds, vegetables and coal. Considerable income is also derived from the digging and selling of medicinal roots, found in the forests, as follows: Ginseng, Black Snakeroot, Puccoon or Bloodroot, Mayapple, Yellowroot and Spikenard.

The quality and character of the soil and its products have been studied and reported on by Mr. W. J. Latimer, of the S. Bureau of Soils, in cooperation with the West Virginia Geological Survey, and the Report thereon will accompany this volume exactly as published by the U. S. Department of Agriculture.

Property Valuations.—The State Auditor gives the following property valuations for Raleigh County for the year 1914:

	Assessed Valuation.	State Tax.
Real Estate	$18,590,310.00	$18,590.31
Personal Property	4,316,760.00	4,316.76
Totals	$22,907,070.00	$22,907.07

The **School Tax** for the year 1914, as given in the records of the Sheriff's office, was as follows:

Teachers' Fund	$58,134.44
Building Fund	29,067.22
Total	$87,201.66

Towns.—The principal towns of Raleigh County are as follows: Beckley, Mabscott, Eccles, Lester, Glen White, Surveyor, Slab Fork, Wickham, Hotchkiss, Tams, Stotesbury, McAlpin, Sophia, Sullivan, Winding Gulf, Pemberton, Blue Jay, Shady Spring, Table Rock, Stanaford, Riley, Terry, Wright, Prosperity, Harper, Cirtsville, Colcord, Dorothy, Jarrolds Valley, Emerson, Royal, Skelton, Beaver, Sprague, Grandview, Crow, Pear, Dillon, Pluto, Odd, Craborchard, Cedar, Fitzpatrick, Ghent, and Daniel.

Beckley.—Beckley was first named Beckleyville, in honor of General Alfred Beckley, one of the pioneers of Raleigh County, and its first Circuit Clerk. The town was designated as the County Seat and incorporated in 1850. The name was later changed to Beckley and was incorporated as a city in 1908. It is the largest municipality in Raleigh County, being built on a high plateau of the New River Group, being located on the Guyandot Sandstone, and is situated on the Giles, Fayette and Kanawha Turnpike, at about 2,400 feet above sea level. During the War of the Rebellion, 1861-1865, several small battles were fought near here by the contending forces. The growth of Beckley has been very rapid. The census of 1900 gives the population as 342, and that of 1910, 2,161, a gain of nearly 600 per cent. It is the commercial center for the mining and lumber industry of the county. It has three banks with a paid up capital as follows:

Beckley National Bank	$ 50,000.00
Bank of Raleigh	100,000.00
Raleigh County Bank	50,000.00
Total	$200,000.00

Beckley also has 10 stores, 4 hotels, 7 churches, high school and a graded school, and is also the home of the Beckley Institute, established in 1906, under the Board of the

Christian Church of West Virginia. This school has a faculty of 17 teachers, a very good library, and offers a good course of study, having this year added the Normal Course for High School Graduates.

Mabscott.—This is a small mining town, incorporated in 1906, located on Whitestick Creek, on the Piney Branch of the C. & O. Railway, its population being 561 in the 1910 census. It has 2 wholesale houses, one foundry and machine works, 4 stores and one bottling works. Several mines are operated near this town.

Eccles.—Eccles is located on Millers Camp Branch of Coal River, and on the Virginian Railway and Piney Branch of the Chesapeake and Ohio Railway. It is a mining town with a fluctuating population. On January 1, 1915, its postmaster reports a population of 1,500 people.

Lester.—Lester is located on Surveyor Creek of Marsh Fork of Coal River, on the Virginian, and C. & O. Railways, about seven miles, air line measure, southwest of Beckley. It has 3 churches, 9 stores, 3 restaurants, one saw mill, one planing mill, and 3 hotels, the population being about 1,200. It derives its revenue from the mining and lumber industries.

Glen White.—Glen White is a mining village with a population of 1,000, located on Shockley Branch of Millers Camp Branch of Marsh Fork of Coal River, about 6 miles southwest of Beckley. It was named in honor of E. E. White, its founder.

Slab Fork.—This town is located on the Virginian Railway on Slab Fork. It was founded by the Slab Fork Coal Company, and is a mining village. Its population was 500 in January, 1914.

Hotchkiss.—Hotchkiss is a small village, with a population of 50, on Slab Fork, on the Virginian Railway, near the Raleigh-Wyoming County Line, having been named in honor of Maj. Jed Hotchkiss, the famous Confederate scout, and the engineer who discovered the Pocahontas Coals. It has 2 hotels, one grist mill and one store.

Tams.—Tams (Gulf P. O.), with a population of 500, is located on Winding Gulf, on the Virginian Railway, near the

mouth of Bailey Branch. It is a mining village, named in honor of W. T. Tams, Jr.

McAlpin.—McAlpin, with a population of 1,000, is a mining village, on Winding Gulf, on the Virginian Railway. It is headquarters for the McAlpin and Baileywood Coal Companies, and has 2 stores, 2 churches, one Y. M. C. A. building, and one hotel.

Sophia.—Sophia, with a population of 300, is a small village on Soak Creek, on the Virginian and C. & O. Railways. The town has 2 churches, 5 general stores, and 2 hotels.

Pemberton.—Pemberton is located on Soak Creek, near its mouth, on the Virginian and Chesapeake and Ohio Railways. Its population in 1914 was 125, and has 4 general stores, one school, one church, one bottling works, one ice plant and one hotel. It is the home of the Pemberton Fuel Company.

Sullivan.—Sullivan, with a population of 650, is a mining village on Piney Creek, on the Chesapeake and Ohio Railway. It is the home of the Sullivan Coal & Coke Company.

Blue Jay.—Blue Jay, with a population of 600, is a village on Beaver Creek, 2.5 miles from its mouth. It is the home of the Blue Jay Lumber Company, and it has one store, one school and one hotel.

Shady Spring.—This is a small village, with a population of 125, on Shady Spring Mountain, in the eastern part of Shady Spring District. It is located on the Beckley and Hinton Turn pike, about seven miles southeast of Beckley, and it has 3 stores, one grist mill and one school. It depends for its existence upon the farming, lumber and mining interests.

Grandview.—Grandview is a small village of 100 people, located on a plateau overlooking New River, in Shady Spring District, 3 miles south of Prince. It has 2 stores and one school, and depends for its existence upon farming, lumbering and mining.

Riley.—Riley, with a population of 700, is a mining village, located on a plateau west and overlooking Piney Creek, about 5 miles from its mouth.

Prosperity.—Prosperity is a small village of 300 people, located on the Giles, Fayette and Kanawha Turnpike, 5 miles

north of Beckley, having 3 general stores, one school, and one church.

Cirtsville.—Cirtsville, with 500 people, is located on the Virginian Railway, near the northern boundary of Raleigh County. It has one church, 2 stores, and one lumber and grist mill, being supported by the mining, farming and lumber industries.

Colcord.—Colcord is a small village of 200 people, on Clear Fork of Coal River. It is the present terminus of the Cabin Creek extension of the Coal River Branch of the Chesapeake and Ohio Railway, and is a mining and lumber town, with 2 stores and one hotel.

Dorothy.—Dorothy is a mining village of 1,000 people, on Clear Fork of Coal River, being a mining town established by the Four States Coal and Coke Company. It has 3 stores, one hotel, and a Mission School, established by the Presbyterian Church, located one mile east of Dorothy.

Jarrolds Valley.—Jarrolds Valley, with 500 people, is located on Coal River at the junction of Marsh and Clear Forks. It depends for its existence upon the mining and lumber industries, and has one hotel, 2 stores, one school and one church.

The following is a list of towns and cross-road villages other than those already described in Raleigh County, ranging in population from 10 to 600; but as they are not incorporated their populations are not given in the report of the U. S. Census for 1910:

	Population.		Population.
Wickham	600	Lanark	150
Cabell	25	Whorley	30
Surveyor	60	Sylvia	200
Tolley	25	Fitzpatrick	30
Stone Coal Junction	15	Skelton	75
Odd	50	Arnett	10
Lynwinn	400	Masseysville	10
Winding Gulf	600	Dry Creek	25
Abraham	10	Launa	10
Pluto	15	Hecla	10
Crow	200	Raleigh	350
Royal	100	Hotcoal	400
Terry	300	Affinity	350
McCreery	15	Ghent	15
Wright	400	Daniels	60
Stonewall	60	Beaver	50

	Population.		Population.
Dillon	15	Harper	50
New	15	Bolt	50
Pear	15	Stover	15
Price Hill	600	Redbird	15
Oswald	300	Dameron	30
Nesco	20	Matville	50
Tamroy	400	Zada	15
Cranberry	500	Saxon	15
Sprague	250	Posey	15
Craborchard	50	Emerson	300
Maynard	25	Artie	15
Sweeneyburg	25		

The above figures are only approximate, as the majority of the places are mining or lumber towns, and the population is fluctuating, owing to labor conditions.

Mercer County.

Mercer County lies south of Raleigh and Summers Counties, and is bounded on the east by Summers County, and Virginia; on the south by Virginia, and on the west by Virginia, McDowell, Wyoming and Raleigh Counties of West Virginia. The coal area of Mercer comprised in Rock and Jumping Branch Districts are the only portions of the County discussed in this volume.

Area.—The area of these two districts, as computed from the accurate topographic sheets of the United States Geological Survey, is as follows:

Districts	Square Miles.
Jumping Branch	92.30
Rock	63.99
Total	156.29

Relief.—The general surface of these two districts varies in elevation from 1554 feet above tide, where the eastern line crosses Bluestone River, to 3566 feet above tide on Huff Knob, on the Raleigh-Mercer County Line in the northern part of the County on Flattop Mountain, a range in elevation of 2012 feet.

Population.—The population of Mercer County in 1900 was 33,023, of which 20,119 were whites, 2,902 negroes, and 269 foreign born. The population in 1910 is given by the

United States Census as 38,371. The Districts under discussion contain the following:

Districts.	1910	1900
Jumping Branch	1,122	1,214
Rock	13,572	7,771
Totals	14,694	8,985

The above figures show that in the last decade, Rock District has increased nearly 100 per cent., owing to mining development, and Jumping Branch has decreased about 10 per cent. in population, possibly due to the fact that very little lumber and no mining developments have been made in this District.

Formation.—Mercer County was formed by an "Act of the General Assembly of Virginia," November 17, 1837, from parts of Giles and Tazewell Counties, and was named in honor of Gen. Hugh Mercer, of Revolutionary fame, who fell in battle at Princeton, N. J. The County Seat was named Princeton from the battlefield in which Gen. Mercer fell.

The following are the boundary lines of Mercer County as first formed:

"Beginning at the mouth of East River in Giles County, and following the meanders thereof up to Toney's mill dam, thence along the top of said mountain to a point opposite the upper end of the old plantation of Jesse Belcher, deceased, thence a straight line to Peerie's mill dam, near the mouth of Alps valley, thence to a point well known by the name of the Pealed Chestnuts, thence to the top of the Flat Top Mountain, thence along said mountain, with the lines of Logan, Fayette and Tazewell Counties to New River, thence up and along the various meanders of the same to the beginning."

Products.—The soil of this county is well adapted to tillage, fruit and grazing. The western part of the county contains the New River and Pocahontas Coals, while the central and eastern parts are covered by the Mauch Chunk Shales and Greenbrier Limestone, both yielding excellent soils.

The principal productions are corn, wheat, oats, buckwheat, hay, millet, beef cattle, hogs, poultry, fruits, vegetables and coal. The mineral wealth of the two districts will be discussed in detail in subsequent Chapters of this Report.

Property Valuations.—The following property valuation

for Mercer County is given by the State Auditor for the year 1914:

	Assessed Valuation.	State Tax.
Real Estate	$19,133,675.00	$19,133.68
Personal Property	7,377,853.00	7,377.85
Totals	$26,511,528.00	$26,511.53

The **School Tax** for the year 1914, as given in the records of the Sheriff's office, is as follows:

Teachers' Fund	$85,244.62
Building Fund	39,605.47
Total	$124,850.09

Princeton.—Princeton, the County Seat, is the oldest town in the county, and is located on the main line of the Virginian Railway. Its population was 3,027 as given in 1910 by the United States Census, and it has 5 churches, 2 banks, 3 newspapers, and a number of wholesale and retail stores. The shops of the Virginian Railway are located here, and the city has an electric railway and good water and sewerage systems.

Bluefield.—Bluefield, with a population in 1910 of 11,188, is located on the Norfolk and Western Railway, 363 miles west of Norfolk, Virginia. It is the shipping center of the Pocahontas Coal Field, and the terminus of a division of the Norfolk and Western Railway. It is a thriving business center, there being possibly more coal shipped through this city than through any other point in West Virginia. It contains 3 banks, 2 daily newspapers, 7 hotels, one flour mill, several small manufacturing plants, Norfolk and Western Repair Shops, 12 churches, one Y. M. C. A. building, a High School, and graded schools, and the Bluefield Colored Institute. The city has paved streets, good water and sewer systems, and an electric railroad.

Bramwell.—Bramwell, with a population of 1,458 in 1910, is a mining town located on the Bluestone River, about 1.5 miles, air line measure, from the Virginia-West Virginia State Line, on the Bluestone Extension of the Pocahontas Branch of

the Norfolk and Western Railway. The corporation, which extends for nearly three miles, includes Coopers, a post-office and junction on the Norfolk and Western Railway, and Freemans, a post-office and shipping point. It has 5 churches, graded public school, one bank, 5 stores, 4 restaurants and one hotel.

Matoaka.—Matoaka, with 1,200 people in 1914, is located on the Norfolk and Western and Virginian Railways, in the mining district, 15 miles northwest of Princeton. It has 2 churches, one bank, 2 schools, 2 hotels, 4 restaurants, and 5 stores.

The following is a list of the towns and cross-road villages other than those already described in Jumping Branch and Rock Districts of Mercer County, ranging in population from 50 to 800, but as they are not incorporated, their populations are not given in the 1910 U. S. Census Report:

	Population.		Population.
Flattop	30	Mannering	300
Barn	20	Mora	20
Dunn	50	Crystal	200
Clarks Gap	150	Montcalm	200
Black	25	Goodwill	250
Giatto	150	Flipping	100
Smokeless	400	Duhring	50
Widemouth	500	Coopers	100
Springton	500	Freeman	100
Hiawatha	450	Bluestone Junction	100
Lewis	50	Coaldale	250
Camp Creek	500	Wolfe	100
Newmans	10	Brush Fork	50

These figures are only approximate, as the majority of the places are mining towns, and the population fluctuates on account of labor conditions in the coal business.

Summers County.

Summers County is bounded on the north by Raleigh, Fayette and Greenbrier; on the east by Greenbrier and Monroe; on the south by Monroe and Mercer, and on the west by Mercer and Raleigh Counties. Only Jumping Branch District will be discussed in detail in this Report.

Area.—The area of Jumping Branch District, as computed from accurate topographic sheets of the United States Geological Survey, is 30.43 square miles.

Relief.—The general surface of this district varies in elevation from 1350 feet above tide at the mouth of Madam Creek to 3360 feet on top of Freezeland Mountain, on the Raleigh-Summers County Line, a range in elevation of 2010 feet, compared with 2012 feet in Mercer, and 2746 feet in Raleigh County.

Population.—The population of Summers County in 1900 was 16,265, of which 15,149 were white, 1,116 negroes, and 64 foreign born. The United States Census for 1910 gives the population as 18,420. Of this number, Jumping Branch District had in 1900, 2,747, and in 1910, 2,797, showing practically no increase in ten years.

Formation.—Summers County, named in honor of Geo. W. Summers, a pioneer of the Kanawha Valley, began its existence by an Act of the West Virginia Legislature, February 27, 1871, being formed from parts of Monroe, Mercer, Greenbrier and Fayette Counties, and Hinton was designated as the County Seat.

The following were the boundary lines of the county when first formed:

"Beginning at the mouth of Round Bottom Branch on New River, in Monroe County, thence crossing said river and running N. 47½° West 5,430 poles through the county of Mercer to a point known as 'Brannon's Gate' on the line dividing the counties of Mercer and Raleigh, thence with said county line in an easterly direction to New River, thence with the line between the counties of Raleigh and Greenbrier, down New River to the line of Fayette County, thence with the line dividing Raleigh and Fayette Counties, down said river to a station opposite Goddard's house, thence leaving the line of Raleigh County, crossing New River, passing through said Goddard's house, N. 67½° E. 3,280 poles, through said county of Fayette to a station on 'Wallow Hole' Mountain in Greenbrier County, thence S. 55° E. 3,140 poles, to a station east of 'Keeney's Knob,' in Monroe County, thence S. 9° E. 1,320 poles, to a station near Greenbrier River, and running thence S. 32° W. 7,740 poles to the beginning."

Products.—The land in Summers County is well adapted to farming, grazing and fruits. A small area of the northern part of Jumping Branch District is underlain with the New River and Pocahontas Coals, while the remaining portion of

the district is well adapted to tillage, grazing, and fruits. The principal products are corn, wheat, buckwheat, oats, rye, hay, millet, beef cattle, hogs, poultry, bee raising, fruits, vegetables and coal. The mineral wealth of Jumping Branch District will be discussed in detail in a subsequent Chapter of this Report.

Property Valuations.—The following property valuations for Summers County are given by the State Auditor for the year 1914:

	Assessed Valuation.	State Tax.
Real Estate	$3,952,260.00	$3,952.26
Personal Property	1,808,565.00	1,808.57
Totals	$5,760,825.00	$5,760.83

The **School Tax** for the year 1914, as given in the records of the Sheriff's office, is as follows:

	Jumping Branch.	Summers County.
Teachers' Fund	$5,614.84	$53,334.23
Building Fund	2,417.30	16,735.61
Totals	$8,032.14	$70,069.84

The **Principal Cities and Towns** in Summers County in Jumping Branch District are Brooklin, Jumping Branch, Lilly, Streeter, Ellison and Mountview.

Hinton.—Hinton, the principal town and County Seat of Summers County, with a population of 3,656 in 1910, is located on a terrace on the eastern bank of New River, about two miles below the mouth of Greenbrier River, on the main line of the Chesapeake and Ohio Railway, 97 miles by rail from Charleston. It was laid out on the lands of John Hinton, and was incorporated September 21, 1880. The elevation of the railroad is 1378 feet above sea level, and the main part of the city is 50 to 150 feet higher. It has 8 churches, 3 public schools, 4 hotels, 3 banks, 2 opera houses, 2 weekly and 2 daily newspapers. The manufacture of lumber is the principal industry, 2 mills being in operation here. A number of railway employes reside here, it being the end of a division. Hinton is

the principal city along the C. & O. Railway between Charleston and the Virginia-West Virginia State Line.

Brooklin.—Brooklin, with a population of 90, is located at the mouth of Madam Creek on New River, opposite Hinton, and is the largest village in Jumping Branch District, having 2 stores and one boarding house.

Jumping Branch.—Jumping Branch, a village with 50 people in 1914, is located about 5 miles west of Hinton, on a high plateau, having 3 stores, one grist mill, one hotel, one school, and 2 churches.

Lilly, Streeter, Ellison and Mountview are other small villages located in the District, each having a store and post-office.

HISTORY OF TRANSPORTATION.

Water Ways.

New River.—New River runs along the area described in this Report for about 33 miles, and forms its northern boundary for that distance. This stream is very rapid, full of falls and large boulders, so that it has little value for transportation purposes, except for floating logs and timber to saw mills along its banks.

Marsh and Clear Forks of Coal River.—Marsh and Clear Forks of Coal River flow in a northwestern direction through the northern part of Raleigh County and afford means of floating logs and timber to Coal River and thence to saw mills at St. Albans.

Bluestone River.—The Bluestone River flows in a northeastern direction through the southern part of the area, and affords means for floating timber to New River.

Steam Railroads.

The Chesapeake and Ohio Railway.—This railway was completed along the northern bank of New River, through Summers County, in 1873, and affords an outlet for freight and passenger traffic in the northern part of Raleigh and Summers Counties.

Piney Creek Branch of Chesapeake and Ohio Railway.—This road was completed from Prince up Piney Creek to Raleigh in 1901, and extended to Lester in 1905. This branch is a great freight carrying road, being the outlet of the coals from the Piney Basin. The road was also extended up Piney Creek from Raleigh Junction, as far as Woodpeck, and from Pemberton up Soap Creek through the Guyandot Mountain to Winding Gulf of Guyandot River, its terminus at present being Stonecoal Junction.

The Piney River and Paint Creek Road.—This road extends from Beckley Junction in Raleigh County to Prosperity, a distance of about 5 miles. It was constructed in 1907, and is now leased and operated by the Virginian Railway Company.

The Virginian Railway.—This railroad extends in a southern direction through the western part of Raleigh County, along the waters of Paint Creek, Millers Camp Branch, Surveyor Creek of Coal River, and Slab Fork of Guyandot River. A branch also extends up Winding Gulf of Guyandot River. It was constructed in 1904, and the Winding Gulf Branch was completed in 1910. It is a great freight carrying road, and is the main eastern outlet for Raleigh County, having 40 miles of track within its boundary lines.

The Kanawha, Glen Jean and Eastern Railway.—This railway extends from Glen Jean to Pax, connecting Loup Creek and Paint Creek. A branch also extends up Loup Creek to Oswald. It was completed into Raleigh County in 1906, and has 3 miles within its boundary.

The Norfolk and Western Railway.—This road enters the southern part of Mercer County from a point near Wills to one mile west of Coaldale, where it crosses the Mercer-McDowell County Line, running a distance of 35 miles in Mercer County.

Bluestone Branch of the Norfolk and Western Railway.—This branch leaves the main line at Bluestone Junction and extends in a southwesterly direction for 1.5 miles to Pocahontas, Virginia.

Widemouth Branch of the Norfolk and Western Railway.—This branch extends down Bluestone River to Rock,

thence up Widemouth Branch to Clarks Gap, a distance of 23.5 miles from Coopers.

Simmons Creek Branch.—This extends up Simmons Creek for a distance of 3 miles from its junction at Freeman.

Flipping Creek Branch of the Norfolk and Western Railway.—This railroad extends up Flipping Creek for a distance of about 4 miles from Flipping Junction.

Crane Creek Branch of the Norfolk and Western Railway.—This branch extends from Montcalm northwesterly up Crane Creek to Mannering, a distance of 5 miles.

A branch of the Norfolk and Western Railway extends up Big Branch of Widemouth to Widemouth from Giatto, a distance of 4 miles.

Electric Roads.

In addition to the foregoing railroads on which steam is used at the motive power, there are two other railroads on which electricity is used for transportation purposes. One of these is in the city of Bluefield, and the other is in Princeton. A line is now under consideration to extend the electric railway from Bluefield to Princeton, a distance of 12 miles.

Highways.

The value of good roads was more appreciated in the early history of Raleigh, Mercer and Summers Counties than at the present time. This changed condition was gradually brought about by the exchange of the stage coach for railroads. However, within the past two years, renewed interest is being awakened in road improvement by the advent of the automobile. Several new roads are now under construction, having been located on a gentle grade, and will be either paved or macadamized suitable for automobile traffic.

The Giles, Fayette and Kanawha Turnpike.—This road extends from Petersburg, Giles County, Virginia, entering West Virginia by way of Petersburg, thence running southeasterly to Red Sulphur Springs, and from there northeasterly along Tallery Mountain, crossing Bluestone River near its mouth; thence by way of Jumping Branch, crossing Whiteoak

Mountain and Glade Creek to Shady Spring; thence to Beckley, crossing Piney Creek at Glen Morgan; thence by way of Prosperity to Mt. Hope, crossing the Fayette-Raleigh Line; thence by way of Oak Hill and Fayetteville to the Kanawha River at Kanawha Falls, and from there along the Kanawha River to Charleston. This road was a general thoroughfare for western travel before the Chesapeake and Ohio Railway was constructed.

The Princeton Road.—The Princeton Road leaves this Turnpike at Shady Spring, extending by way of Flattop and Camp Creek to Princeton and from there to Bluefield.

The Hinton Road.—This road leaves the Giles, Fayette and Kanawha Turnpike at Jumping Branch and extends in an eastern direction to Hinton.

Indian Trails.

During the time of the early settlement of New and Kanawha Rivers, the Indians from the Ohio and lower Kanawha Rivers made frequent marauding trips East, and the following is one of their frequent trails:

"These Indians with their prisoners passed down New River, crossing at the ford above the mouth of Bluestone, thence across what is called White Oak Mountain, the northeastern extension of the Flat Top, by way of where Beckley, in Raleigh County, is now situated, the old Indian trail passes at what is now the junction of the principal streets of the town, and on the head of Paint Creek and down to the Kanawha.

"This trail up Paint Creek and either by Pipe Stem Knob or mouth of Big Bluestone was one of their frequently traveled ways to East River and New River settlements. Paint Creek took its name from several trees standing thereon painted by the Indians as one of their guides or landmarks on marauding expeditions into white settlements, and on their return they by marks on the trees would indicate the number of scalps taken."*

Another trail led up Coal River, from the mouth of Short Creek, by way of Jarrolds Valley, going up Marsh Fork and Drews Creek, crossing Cherry Pond Mountain at Indian Gap to the head of Pond Fork. From thence it led to the waters

*Johnson's History of Middle New River Settlements and Contiguous Territory.

of Guyandot River by way of Walnut Gap. Traces of these trails are evidenced by flints, arrow heads and Indian relics found along the way. Several large pieces of flint have been found near the head of Drews Creek, which had evidently been carried to this point, where arrow heads were once made by the Indians, judging from the small pieces of flint still found there.

INDIAN MOUNDS.

No large mounds were found in the Raleigh-Mercer-Summers area. However, a few small mounds still exist on the headwaters of Marsh Fork, being 20 to 30 feet in diameter and from five to ten feet in height.

CHAPTER II.

PHYSIOGRAPHY.

PHYSIOGRAPHIC CHANGES.

A general description of the physiography of any region is of interest to those who are engaged in a scientific study of Nature's work. The general principles of Physiography are ably set forth in Detailed Reports of the counties that were first studied, to which the reader is referred.

The area under discussion in this volume is drained by New River and its tributaries in the eastern part, by Guyandot River and tributaries on the western part, by Coal River and tributaries on the northwestern part, and by Loup and Paint Creeks in the central part. The streams in general have a northwestern trend.

The following table has been compiled to show in a graphic manner not only the rate of fall per mile of the principal streams of the Raleigh-Mercer-Summers Area, but also their departure from a straight line course, and the ratio of the total distance (T. D.) between the points of same, measured by the meanders of the stream, to the air line distance (A. L. D.) between the same points, as follows:

Table of Stream Data.

Streams.	Total Fall. Feet.	Total Dist. Miles.	Rate of Fall Per Mile. Feet.	Air Line Dist. Miles.	Ratio T. D. to A. L. D.
Kanawha River from Gauley Bridge to Kanawha Falls	25.0	2.0	12.5	1.6	1.2
Kanawha River, from Kanawha Falls to Montgomery	20.25	9.5	2.1	7.0	1.3
Kanawha River, from Montgomery to Charleston	38.75	26.0	1.5	20.7	1.2
Kanawha River, from Charleston to Lock No. 7	8.5	15.8	0.53	12.6	1.2
Kanawha River, from Lock No. 7 to Point Pleasant	29.5	44.2	0.67	35.0	1.3
Kanawha River, from Gauley Bridge to Point Pleasant	99.5	97.5	1.02	61.0	1.6
New River, source to mouth	2320.0	284.0	8.2	124.0	2.3
New River, source to Hawks Nest	132.0	7.5	17.6	5.3	1.4
New River, Hinton to Thurmond	305.0	39.0	7.8	22.5	1.7
New River, Radford to Hinton	370.0	105.0	3.5	50.0	2.1
Greenbrier River, source to mouth	1390.0	140.0	9.9	87.0	1.6
Greenbrier River, Alderson to mouth	170.0	30.0	5.7	14.3	2.1
Greenbrier River, Ronceverte to Alderson	114.0	18.0	6.3	10.0	1.8
Greenbrier River, source to Ronceverte	1096.0	92.0	11.9	67.0	1.4
Coal River, Jarrolds Valley to Saint Albans	265.0	59.0	4.5	34.3	1.7
Coal River, Brounland to Saint Albans	38.0	17.5	2.2	11.3	1.5
Guyandot River, source to mouth	1105.0	168.0	6.6	82.0	2.0
Bluestone River, source to mouth	2985.0	83.0	36.0	42.0	1.98
Bluestone River, Springville to mouth of Mountain Creek	1095.0	67.5	16.2	32.0	2.1
Bluestone River, mouth of Mountain Creek to New River	190.0	12.0	15.8	8.0	1.5
Marsh Fork, source to mouth	1061.0	29.1	36.5	18.1	1.6
Clear Fork, source to mouth	1700.1	24.0	70.8	15.5	1.6
Clear Fork, mouth of Spruce Fork to Jarrolds Valley	810.0	21.7	37.3	13.7	1.6
Piney Creek, source to mouth	2125.0	32.4	65.6	18.1	1.8
Piney Creek, mouth of Keaton Branch to Sullivan	135.0	8.5	15.9	6.5	1.3
Piney Creek, Sullivan to Raleigh	175.0	10.2	17.1	4.1	2.5
Piney Creek, Raleigh to McCreery	900.0	11.5	78.2	7.5	1.5
Glade Creek, source to mouth	2120.0	21.8	97.2	17.5	1.2
Glade Creek, mouth of Farley Creek to mouth of Cooper Creek	200.0	5.0	40.0	4.2	1.2
Glade Creek, mouth of Cooper Creek to mouth of Glade Creek	1430.0	13.1	109.2	10.4	1.3
Paint Creek, source to mouth	1550.0	39.0	39.7	29.0	1.4
Laurel Fork, source to mouth	1160.0	23.4	49.6	14.0	1.7
Winding Gulf, source to mouth	925.0	15.0	61.7	3.7	4.06

Streams.	Total Fall. Feet.	Total Dist. Miles.	Rate of Fall Per Mile. Feet.	Air Line Dist. Miles.	Ratio T. D. to A. L. D.
Winding Gulf, Stotesbury to mouth	240.0	6.9	34.8	6.0	1.1
Beaver Creek, source to mouth	1095.0	11.7	93.6	8.2	1.4
Dunloup Creek, source to mouth	1365.0	15.6	87.5	9.5	1.6
Peachtree Creek, source to mouth	1425.0	6.1	233.6	5.2	1.2
Slab Fork, source to mouth	1175.0	15 5	75.8	10.5	1.5
Stonecoal Creek, source to mouth	1165.0	10.5	110.9	7.7	1.4
Tommy Creek, source to mouth	1700.0	9.7	175.2	8.1	1.2
Pinch Creek, source to mouth	945.0	8.3	113.8	6.2	1.3
Hazy Creek, source to mouth	1600.0	7.0	228.5	3.8	1.8
Sandlick Creek, source to mouth	770.0	9.3	82.8	8.0	1.2
Camp Creek, source to mouth	1450.0	12.5	116.0	8.0	1.5
Mountain Creek, source to mouth	1765.0	9.0	196.1	6.1	1.5
Devils Fork, source to mouth	500.0	5.0	100.0	4.3	1.2
Widemouth Creek, source to mouth	135.0	5.2	26.0	3.6	1.4
Rich Creek, source to mouth	1380.0	9.5	145.2	7.5	1.3
Little Bluestone River, source to mouth.	1685.0	10.0	168.5	5.7	1.8
Rock Creek, source to mouth	1340.0	5.2	257.7	4.2	1.2
Horse Creek, source to mouth	1875.0	5.0	375.0	4.4	1.1
Little Marsh Fork, source to mouth	1750.0	6.5	269.2	5.5	1.2
Breckenridge Creek, source to mouth	785.0	5.0	157.0	3.0	1.7
Millers Camp Branch, source to mouth	425.0	6.2	68.5	4.3	1.4
Sycamore Creek, source to mouth	1980.0	6.2	319.3	5.1	1.2
Sand Fork, source to mouth	800.0	5.1	156.8	4.0	1.3
Fat Creek, source to mouth	1400.0	6.6	212.1	4.5	1.5
Cranberry Creek, source to mouth	775.0	5.7	136.0	4.6	1.2
Little Beaver Creek, source to mouth	725.0	9.8	74.0	6.1	1.6
Whitestick Creek, source to mouth	355.0	6.0	59.2	5.3	1.1
Laurel Creek, source to mouth	1000.0	5.4	185.2	5.0	1.1
Allen Creek, source to mouth	985.0	7.7	127.9	6.3	1.2
Suck Creek, source to mouth	1270.0	5.0	254.0	3.8	1.3
Wolf Creek, source to mouth	675.0	5.0	135.0	4.0	1.3
Righthand Fork of Widemouth Creek, source to mouth	775.0	6.2	125.0	5.4	1.1
Lefthand Fork of Widemouth Creek, source to mouth	660.0	5.2	127.0	3.8	1.3
Crane Creek, source to mouth	1185.0	7.3	162.3	5.5	1.3
Crane Creek, Mora to Montcalm	105.0	4.7	22.3	3.3	1.5
Flipping Creek, source to mouth	515.0	4.5	114.4	3.7	1.2
Madam Creek, source to mouth	1300.0	6.7	194.0	5.4	1.4

In the last column of the foregoing table is given the ratio of the total distance (T. D.) measured by the meanders of the streams to the air line distance (A. L. D.). In each instance it is very evident that the nearer this ratio approaches unity, the greater the rate of fall.

RALEIGH COUNTY CREEKS AND RIVERS.

Coal River.

Coal River is formed by the junction of Clear and Marsh Forks at Jarrolds Valley on the Boone-Raleigh County Line, and flows in a northwestern direction for 59 miles, emptying into the Kanawha River at Saint Albans. It flows 31.5 miles through Boone County, 3.2 miles as a dividing line between Boone and Kanawha Counties, then 6 miles through Kanawha County, then 4 miles as a dividing line between Lincoln and Kanawha Counties, and 14.3 miles through Kanawha County before emptying into the Kanawha River.

Its fall from Jarrolds Valley to Saint Albans is 265 feet, or 4.5 feet per mile. It falls 38 feet from Brounland to Saint Albans in a distance of 17.5 miles or 2.2 feet to the mile. Its drainage area in Kanawha County is 68.4 square miles. It drains a portion of Lincoln County, all of Boone County, a portion of Logan County, and 227 square miles of Raleigh County. Its entire length by meanders is 59 miles, while the air line distance between its source and its mouth is but 34.3 miles. The first 12 miles from its mouth is very crooked and has almost reached base level. It is very probable that it once left its present course about 0.5 mile above Lower Falls P. O., and flowed across a low divide southwest to Saint Albans at the same point in 1.4 miles instead of 5.5 miles measured by its present course.

Coal River was locked and dammed in 1840-1860 by the Coal River Navigation Company, under Captain (later General) Rosecrans, for the purpose of transporting cannel coal from Peytona to market. During the Civil War these improvements were neglected and the river washed them out.

Marsh Fork.

Marsh Fork takes its source at Surveyor in central eastern part of Trap Hill District, by the junction of Millers Camp Branch and Surveyor Creek at an elevation of 1909 feet A. T., and flows in a general northwestern direction, emptying into

Coal River at Jarrolds Valley. Its entire length by its meanders is 29.1 miles. The air line distance from source to mouth is 18.1 miles. Its fall from source to mouth is 1061 feet, or 36.5 feet to the mile. From Surveyor to Trap Hill—Marsh Fork District Line, the fall is about 165 feet in 7 miles, or 23.6 feet per mile. From the latter point to the mouth of Rock Creek, the fall is 435 feet in 8 miles, or 54.4 feet per mile. From there to the mouth of Hazy Creek, the fall is about 325 feet in 7.1 miles, or 45.7 feet per mile. From the latter point to Jarrolds Valley, the fall is about 140 feet in 7 miles, or 20 feet per mile. It is observed that the first seven miles of this stream has about the same fall as the last seven miles, while the middle 15 miles has more than double the fall of these two points. Marsh Fork and its tributaries drain more than one-fourth of Raleigh County, 162.2 square miles, all of Marsh Fork and Trap Hill Districts, 10.8 square miles in Clear Fork District and 3 square miles in Town District.

The principal tributaries of Marsh Fork are, in ascending order: Little Marsh Fork, Hazy Creek, Horse Creek, Peachtree Creek, Dry Creek, Rock Creek, Sandlick Creek, Cove Creek, Breckenridge Creek, Maple Meadow Creek, Dingess Branch, Millers Camp Branch, and Surveyor Creek.

Little Marsh Fork.

Little Marsh Fork has its source in Marsh Fork and Clear Fork Districts in the northwestern portion of Raleigh County, and flows in a general northwestern course, emptying into Marsh Fork one mile south of Jarrolds Valley. It drains an area of 13.4 square miles. It is 6.5 miles in length from its source to mouth by meanders, while its air line distance is 5.5 miles. The fall is about 1150 feet in the first two miles, or 575 feet to the mile. From the mouth of Beetree Branch to Marsh Fork, the fall is about 600 feet in 4.5 miles, or 133.3 feet to the mile. Its principal tributary is **Birch Fork,** which has its origin about one mile northeast of Squealer Knob, and flows in a northwestern direction, emptying into Little Marsh Fork 1.25 miles south of Jarrolds Valley. It is 5 miles long and

falls about 1450 feet from source to mouth, or 290 feet to the mile. It drains an area of 4 square miles.

Clear Fork.

Clear Fork takes its source in the ridge dividing Clear Fork and Town Districts, about 2.8 miles south of the corner of Clear Fork and Town Districts in the Raleigh-Fayette County Line, and flows in a general northwestern direction to the mouth of Horse Creek, where it deflects to the west and flows in a general western direction to Jarrolds Valley, where it empties into Coal River. Its entire length by meanders is 24 miles. The air line distance between the source and mouth is 15.1 miles. It drains an area of 64.9 square miles. Its fall from source to mouth is about 1700 feet in 24 miles, or 70.8 feet to the mile. From the mouth of Spruce Fork to the mouth of Toney Fork, the fall is about 175 feet in 4.8 miles, or 36.5 feet to the mile. From the latter point to Colcord, the fall is about 435 feet in 10.5 miles, or 41.4 feet to the mile. From Colcord to Jarrolds Valley, the fall is about 200 feet in 6.4 miles, or 31.2 feet to the miles. Going up Clear Fork the following are the principal tributaries: Rockhouse Creek, Sycamore Creek, Whiteoak Creek, Toney Fork, and Workman Creek.

Paint Creek.

Paint Creek has its source in Raleigh County, just north of Harper, and flows in a general northern direction to the Kanawha River at Paint Creek Junction, or Pratt P. O. It is 39 miles in length from source to mouth by the meanders. This creek flows 6.5 miles through Raleigh County, crossing the Raleigh-Fayette County Line at one-fifth mile north of Cirtsville. It flows 17.5 miles through Fayette County, crossing the Fayette-Kanawha County Line about one mile southwest from Burnwell, and flows 15 miles through Kanawha County. From its source to mouth, the fall is 1550 feet in 39 miles, or 39.7 feet to the mile. Its fall from source to Raleigh-Fayette County Line is about 690 feet in 6.5 miles, or 106.1 feet to the mile. Paint Creek drains 25.6 square miles in

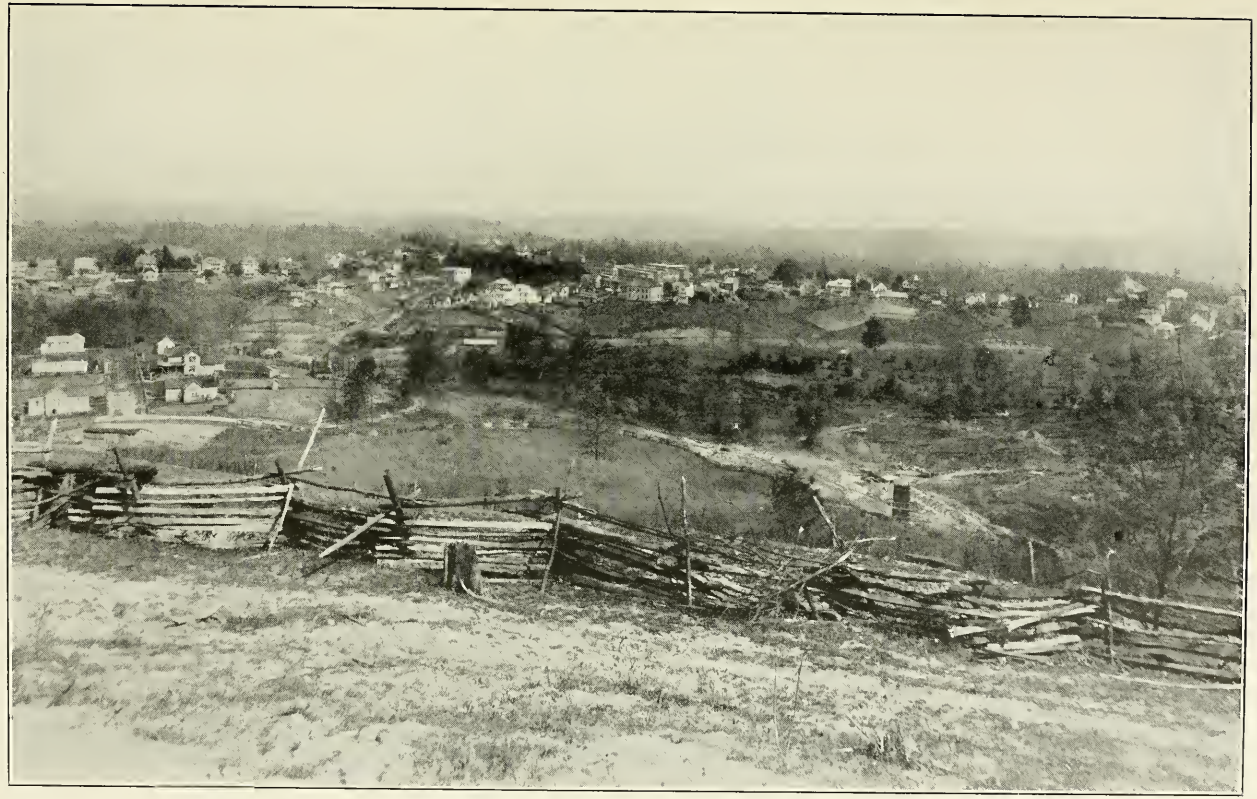

PLATE II.—Beckley looking east from Knob Hill, showing New River Group.

Town District, Raleigh County. Its principal tributary in Raleigh County is **Sand Fork,** which drains an area of 11.1 square miles in Raleigh County. Its fall from source to mouth is about 800 feet in 5.1 miles, or 156.8 feet to the mile. The air line distance from source to mouth is 4 miles. The principal tributary of Sand Fork is Maple Fork.

Dunloup Creek.

The drainage area of Dunloup Creek in Raleigh County is 9.7 square miles. It has its source in the northern part of Town District, Raleigh County, and flows in a northwestern direction for 3.2 miles through Raleigh County, crossing the Raleigh-Fayette County Line at Price Hill; just north of this point, it deflects to the northeast, in which direction it flows for about 2.5 miles to just south of Dunloup, where it deflects to the northwest, flowing in that direction for about 1.8 miles to Sun, where it again makes a sharp turn to the northeast, and flows in a general northeasterly direction to New River, emptying into the latter at Thurmond. Its entire length is 15.6 miles. Its fall from source to Price Hill is about 625 feet in 3.2 miles, or 195 feet to the mile. From Price Hill to Thurmond, the fall is about 740 feet in 12.4 miles, or 59.7 feet to the mile. The principal tributary of Dunloup Creek in Raleigh County is Mill Creek.

Piney Creek.

Piney Creek has its source in Indian Grave Mountain of Guyandot Mountain, in the Raleigh-Mercer County Line, in the northern part of Shady Spring District, Raleigh County, and three-fourths of a mile southwest of Bald Knob, at an elevation of about 3325 feet A. T. B., and flows in a northwestern direction for 4.5 miles along the northeastern base of the Guyandot Mountain, thence it deflects to a general northern direction along the eastern base of the same mountain for about 10.5 miles to the mouth of Craborchard Creek, where it turns to the northeast, and it flows in a general northeastern direction, cutting through the Pottsville Series into the Mauch

Chunk, to McCreery, where it empties into New River. Its entire length by its twists and turns is 32.4 miles. The air line distance between the same points is 18.1 miles. The fall from source to mouth is about 2125 feet in 32.4 miles, or 65.6 feet to the mile. From the source to the mouth of Keaton Branch, the fall is about 900 feet in 2.2 miles, or 409.1 feet to the mile. From the latter point to Sullivan, the fall is 135 feet in 8.5 miles, or 15.9 feet to the mile. From Sullivan to Raleigh, the fall is 175 feet in 10.2 miles, or 17.1 feet to the mile. From Raleigh Station to McCreery, the fall is about 900 feet in 11.5 miles, or 78.2 feet to the mile. It will be observed that the fall from Raleigh Station to the mouth of Piney Creek is more than 4 times that from the mouth of Keaton Branch to Raleigh Station. Piney Creek drains about 87 square miles of Shady Spring District, and about 48 square miles of Town District, making its total drainage area about 135 square miles. Passing up Piney Creek, its principal tributaries are Batoff, Fat, Cranberry, Beaver, Whitestick, Crab-orchard, Soak, Take-in, Bowyer and Laurel Creeks and Keaton Branch.

Glade Creek.

Glade Creek has its source about one mile east of Flattop, in the Guyandot Mountain, at the common corner of Mercer, Summers and Raleigh Counties, at an elevation of about 3325′ B., and flows in a general northern direction, emptying into New River, just west of Glade Station and Krise P. O. Its entire length by the meanders is 21.8 miles. The air line distance between the same points is 17.5 miles. From its source to the mouth of Farley Creek, the descent is about 490 feet in 3.7 miles, or 132.4 feet to the mile. From the mouth of Farley Creek to the mouth of Cooper Creek, the fall is about 200 feet in 5 miles, or 40 feet to the mile. From the mouth of Cooper Creek to the mouth of Glade Creek, the fall is 1430 feet in 13.1 miles, or 109.2 feet to the mile. The area drained by Glade Creek is 64 square miles. The principal tributaries of Glade Creek are Pinch and Cooper Creeks.

The Guyandot River.

The Guyandot River takes its source near the Flattop and Guyandot Mountains in southwestern Raleigh County, where it is formed by the junction of Winding Gulf and Stonecoal Creek, and flows in a general northwesterly direction through Raleigh, Wyoming, Logan, Lincoln and Cabell Counties, emptying into the Ohio River at Guyandot or East Huntington. Its entire length by meanders is about 168 miles, and its fall from source to mouth is about 1105 feet or from 1600 feet above tide at Stonecoal Junction to 495 feet at the Ohio River. The greatest descent of the river is in the first 50 miles of its length, or from Stonecoal Junction to Gilbert, the fall for this distance being about 780 feet. This river is a very crooked stream, since the air line distance from its source to its mouth is only 82 miles,—less than one-half its meandering distance.

The waters of the Guyandot have long been utilized in floating log rafts and loose logs from its headwaters to its mouth. In the past twenty years many millions of feet of valuable timber have thus been transported to market. It was also used as early as 1853 for transporting coal down to the Ohio River from Branchland. Freight was transported for years on this river in small boats propelled by men with "push poles," where the water was not too deep, and rowed where the water was too deep for poles. In the summer season, when the water was low, mules were used to propel these boats through the rapids or shoals. But since the construction of the Guyandot Division of the Chesapeake and Ohio Railway to Logan, river transportation has practically been abandoned. This river flows but about one-half mile through Raleigh County, crossing the Raleigh-Wyoming County Line at one-half mile south of Stonecoal Junction.

The principal tributaries of the Guyandot River in Raleigh County are Slab Fork, Allen Creek, Devils Fork, Stonecoal and Tommy Creeks.

Slab Fork.

Slab Fork drains an area of 15.1 square miles in Raleigh County. It has its source in the Guyandot Mountain, at the

common corner of Trap Hill, Town and Slab Fork Districts, and flows in a general southwestern direction for 9.5 miles to the mouth of Marsh Fork, where it deflects slightly to the southeast, and flows in that direction for 6 miles, emptying into the Guyandot River at Mullens. Its entire length by the meanders is 15.5 miles. The air line distance from source to mouth is 10.5 miles. From source to Slab Fork, the fall is about 775 feet in 3.5 miles or 221.4 feet to the mile. From Slab Fork to Mullens, the fall is about 400 feet in 11.6 miles, or 34.5 feet to the mile. The principal tributaries of Slab Fork in Raleigh County are Low Gap Branch, Burnt Fork and Grave Fork.

Laurel Fork.

Laurel Fork of Clear Fork of the Guyandot River has its source in the northwestern corner of Slab Fork District of Raleigh County, 2.5 miles west of Jenny Gap, and flows in a general western direction, emptying into Clear Fork about one mile east of Oceana, Wyoming County. Its entire length by the meanders is about 23.4 miles. The air line distance between the source and mouth is 14 miles. From the source to the mouth of Beech Fork, near the Wyoming-Raleigh Line, the fall is about 750 feet in 2.2 miles, or 340.9 feet to the mile. It drains an area of 4 square miles in Raleigh County.

Winding Gulf.

Winding Gulf drains an area of 22.2 square miles. It has its source at the southwest end of Mitchell Ridge, 2.8 miles just south of east from Tams, and flows in an almost east direction for about 1.5 miles just north of Mitchell Ridge, then it makes a right-angled turn, running in a general northern direction for about 3.3 miles to a point 0.6 mile northeast of Hotcoal, where it butts up against the Guyandot Mountain and makes a short turn to the southwest and flows in a general southwestern course for 6.2 miles to the mouth of Mill Branch, where it deflects to a general southern course, and flows for 4 miles in that direction, emptying into Guyandot River near Stonecoal Junction. The entire length of this stream by the

meanders is 15 miles, while the air line distance between the same points is only 3.7 miles, showing a very winding channel, hence its name.

The fall from source to the mouth of the West Fork of Winding Gulf is about 490 feet in 3.6 miles, or 136.1 feet to the mile. From the latter point to Stotesbury, the fall is about 245 feet in 4.5 miles, or 54.4 feet to the mile. From Stotesbury to the mouth, the fall is 240 feet in 6.9 miles or 34.8 feet to the mile. Its principal tributaries are Berry Branch and the West Fork.

Stonecoal Creek.

Stonecoal Creek has its source in the Guyandot Mountain, near Odd, in the eastern portion of Slab Fork District, and flows in a northwestern direction to the mouth of Laurel Fork, where it deflects to the west, and flows almost due west to the mouth of Riffe Branch, where it turns to the southwest, emptying into Guyandot River at Stonecoal Junction. It drains an area of 33 square miles. Its length by the meanders is 10.5 miles. The air line distance between the same points is 7.7 miles. From the source to the mouth of Laurel Fork, the fall is is about 890 feet in 4 miles, or 222.5 feet to the mile. From the mouth of Laurel Fork to the Guyandot River, the fall is about 275 feet in 6.5 miles or 42.4 feet to the mile. Its principal tributaries are Tommy Creek, Riffe Branch, Farley Branch and Laurel Fork.

Tommy Creek.

Tommy Creek has its source in the Guyandot Mountain, at the common corner of Shady Spring and Slab Fork Districts, in the Raleigh-Mercer County Line, and flows in a general eastern direction, emptying into Stonecoal Creek about one mile east of Stonecoal Junction. It drains an area of 14.5 square miles. Its entire length by the meanders is 9.7 miles. The air line distance between the same points is 8.1 miles. From the source to Odd P. O., the fall is about 650 feet in 2.4 miles, or 270.8 feet to the mile. From Odd to mouth of Bragg

Branch, the fall is about 850 feet in 4 miles, or 212.5 feet to the mile. From the mouth of Bragg Branch to mouth of Tommy Creek, the fall is about 200 feet in 3.3 miles, or 60.6 feet to the mile. The principal tributaries of Tommy Creek are Bragg Branch and Lefthand Branch.

Devils Fork of Guyandot River.

Devils Fork of Guyandot River drains an area of 22.5 square miles. It has its source in the junction of Bluff Fork and Wiley Spring Branch, 1.3 miles northeast of Basin, in the southern part of Slab Fork District, and flows in a general northwestern direction, emptying into the Guyandot River where that river crosses the Wyoming-Raleigh County Line, or about 0.6 mile south of Stonecoal Junction. Its length by meanders is 5 miles. The air line distance between the same points is 4.3 miles. From the source to mouth, the fall is about 500 feet in 5 miles, or 100 feet to the mile. Its principal tributaries are Wiley Spring Branch and Bluff Fork.

STREAMS IN SUMMERS AND MERCER COUNTIES.

Bluestone River.

Bluestone River has its source in East River Mountain, at an elevation of 3350′ A. T., 2.5 miles southwest of Springville, Tazewell County, Virginia, and flowing in a general northwestern course, just northwest of East River Mountain, where it makes a right-angled turn to the northwest, flowing in a general northeastern course to Bluestone Junction, crossing the Virginia-West Virginia State Line just east of Yards. At Bluestone Junction, it deflects to the northeast again, and flows in a general northeastern direction to True, where it empties into New River, 5 miles south of Hinton. Its course through Mercer County is very crooked. Its entire length by the meanders is about 83 miles. The air line distance between the same points is about 42 miles. From the source to Springville, the fall is 1,700 feet in about 3.5 miles, or 485.7 feet to the mile. From Springville to Graham, the fall is about 265

feet in 11.5 miles, or 23.1 feet to the mile. From Graham to the mouth of Mountain Creek, the fall is about 830 feet in 56 miles, or 14.8 feet to the mile. From the latter point to New River, the fall is about 190 feet in 12 miles, or 15.8 feet to the mile. Bluestone River flows for about 20 miles through Virginia, 51 miles through Mercer County, and 12 miles through Summers County. Its principal tributaries from the west in West Virginia are Little Bluestone River, Mountain, Laurel, Camp, Wolf, Rich, Widemouth, Crane, Flipping and Simmons Creeks.

Two gage stations were established on Bluestone River by the United States Geological Survey, in order to determine the surface water supply of the stream.

The following interesting data, obtained at Lilly, W. Va., are taken from Water Supply Paper No. 303 of said Survey, as given on pages 47-49:

"BLUESTONE RIVER AT LILLY, W. VA.

Location.—At Lilly, W. Va., 2,000 feet below the mouth of Little Bluestone River.

Records available.—August 22, 1908, to December 31, 1911.

Drainage area.—454 square miles.

Gage.—Vertical staff gage in two sections; datum unchanged since established.

Channel.—Practically permanent.

Discharge measurements.—Made from a boat 150 feet above gage, or by wading.

Point of zero flow.—Levels taken August 24, 1910, indicate that there would be no flow past the gage if the river stage were to fall to 0.0 ± 0.2 feet.

Winter flow.—During portions of December, January and February the flow is at times affected by ice.

Accuracy.—See footnotes to table of daily gage height.

Discharge Measurements of Bluestone River at Lilly, W. Va., in 1911.

Date	Hydrographer.	Gage Height. Feet.	Discharge. Sec.-Feet.
July 13	Horton and Bailey.....	1.92	218
Oct. 18	Bailey and Perwien.....	5.90	4,460
20	Bailey and Perwien.....	2.98	786

Note.—Measurements not made at the regular measuring section.

Daily Gage Height, in Feet, of Bluestone River at Lilly, W. Va., for 1911.
(W. H. Lilly, observer.)

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	3.15	4.65	2.04	2.62	2.85	1.32	1.42	0.99	1.22	0.97	1.56	2.20
2.....	5.50	4.20	2.05	2.66	2.68	1.40	1.41	.94	1.18	2.60	1.49	2.25
3.....	4.90	3.12	2.22	4.00	2.66	1.44	1.39	.89	1.15	5.20	1.39	2.00
4.....	4.20	2.85	2.28	5.55	2.64	1.36	1.44	.92	1.11	4.20	1.32	2.00
5.....	3.75	2.68	2.35	5.00	2.66	1.45	2.15	.98	1.08	2.40	1.22	1.80
6.....	2.70	2.65	2.45	4.95	2.45	1.38	1.95	.99	1.02	3.55	2.50	1.75
7.....	2.40	2.59	6.35	4.50	2.29	1.46	2.20	.96	.92	2.90	3.75	1.70
8.....	2.25	2.88	6.20	4.20	2.00	1.52	2.55	.97	.95	2.25	3.58	1.72
9.....	2.12	4.45	5.65	5.05	1.99	1.46	2.15	.94	1.06	2.42	3.45	1.64
10.....	1.95	5.55	4.80	4.85	1.96	1.42	2.12	.96	1.10	2.55	3.34	1.61
11.....	1.82	3.95	4.55	3.62	1.92	1.32	2.04	1.02	1.06	2.30	2.35	1.60
12.....	1.92	3.10	3.85	2.95	1.79	1.18	1.89	1.01	1.02	2.80	2.14	1.60
13.....	1.88	2.84	3.20	2.85	1.62	1.07	1.86	1.09	.96	2.85	2.20	1.65
14.....	1.90	2.62	2.95	3.10	1.60	1.06	1.57	1.02	.89	2.60	2.25	1.64
15.....	1.85	2.48	2.82	3.90	1.64	1.01	1.42	.96	.89	2.20	2.12	1.63
16.....	1.82	2.25	2.60	4.32	1.52	1.02	1.40	.94	1.02	2.02	2.12	1.88
17.....	1.92	2.20	2.42	4.10	1.44	1.04	1.32	.90	.96	2.39	2.19	1.88
18.....	1.86	2.35	2.55	3.85	1.40	1.09	1.22	.94	1.02	5.70	2.16	1.86
19.....	1.78	3.00	3.25	3.72	1.40	1.18	1.19	.95	1.22	3.95	3.70	1.85
20.....	1.82	3.15	3.90	3.95	1.42	1.09	1.12	.96	1.22	2.79	3.95	1.80
21.....	1.95	3.05	3.45	4.20	1.44	1.16	1.15	.92	1.12	2.48	3.25	1.80
22.....	2.45	2.99	3.25	3.70	1.49	1.20	1.14	.92	1.18	2.30	2.37	1.82
23.....	2.82	2.87	2.95	3.05	1.54	1.26	1.09	.96	1.05	2.22	2.32	4.55
24.....	2.68	2.25	2.75	2 98	1.52	1.25	1.00	.99	1.02	2.16	3.34	3.66
25.....	2.45	2.32	2.70	2.78	1.42	1.65	.96	.95	.92	2.10	3.36	3.66
26.....	2.35	2.32	2.58	2.65	1.49	1.85	.97	.93	.96	2.06	3.05	3.45
27.....	2.44	2.30	2.42	2.48	1.51	1.59	.97	.89	.91	2.00	2.32	3.40
28.....	2.40	2.45	2.52	2.42	1.42	1.52	.96	.93	.92	1.86	2.19	3.00
29.....	2.55	....	2.55	2.34	1.25	1.56	.94	1.10	.96	1.79	2.25	2.80
30.....	6.55	....	2.66	2.85	1.30	1.49	.96	1.25	.94	1.72	2.27	3.00
31.....	5.05	....	2.62	....	1.45	....	.96	1.32	....	1.55	....	2.90

"Note.—From a hydrograph comparison between the gage heights observed at Lilly and True, it is believed that the observer at Lilly recorded his observations 1 foot too high Nov. 8 (p. m.) to Nov. 10 (p. m.), Nov. 20 (a. m.) to Nov. 21 (p. m.) and Nov 24 (a. m.) to Nov. 26 (a. m.). Daily gage heights published above are the means of two observations each day as originally recorded and are believed to be ½ foot too high Nov. 8 and 26, and 1 foot too high Nov. 9, 10, 20, 21, 24 and 25. In computing daily discharge for dates noted above, corrections to gage heights will be applied before entering the discharge rating table, as indicated by the hydrograph comparison.

Observer made no report concerning ice. Relation of gage height to discharge probably affected by ice during January and February, but not during December.

BLUESTONE RIVER NEAR TRUE, W. VA.

Location.—At Barker's ford, 1 mile above the mouth of the river and three-fourths of a mile above True post office.

Records available.—October 17, 1911, to December 31, 1911.

Gage.—Staff gage in two sections, on right side of river.

Channel.—Practically permanent.

Discharge measurements.—Made from a boat 20 feet below gage or by wading.

Winter flow.—The relation of gage height to discharge may be affected by ice for short periods during December, January and February.

Accuracy.—Gage-height record is considered reliable. Sufficient data have not been obtained to permit estimates of discharge to be made.

Discharge Measurements of Bluestone River Near True, W. Va., in 1911.

Date.	Hydrographer.	Gage Height. Feet.	Discharge. Sec.-Feet.
Oct. 19	Bailey and Perwien.....	4.45	2,240
20	Bailey and Perwien.....	2.90	693

Note.—Measurements made at gage, 20 feet above regular gaging section.

Daily Gage Height, in Feet, of Bluestone River Near True, W. Va., for 1911.

(Arthur Barker, observer.)

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1.....	....	1.88	2.20	11.....	....	2.06	1.90	21.....	2.50	2.65	1.96
2.....	....	1.82	2.16	12.....	....	2.08	1.89	22.....	2.40	2.41	2.13
3.....	....	1.80	2.12	13.....	....	2.15	1.86	23.....	2.40	2.28	4.74
4.....	....	1.80	2.08	14.....	....	2.48	1.88	24.....	2.30	2.27	3.78
5.....	....	1.79	2.05	15.....	....	2.28	1.92	25.....	2.17	2.34	3.78
6.....	....	2.62	1.94	16.....	....	....	1.94	26.....	2.10	2.44	3.65
7.....	....	3.60	1.97	17.....	5.00	2.16	1.99	27.....	2.02	2.44	4.05
8.....	....	2.99	1.99	18.....	5.88	2.21	2.04	28.....	2.01	2.40	3.50
9.....	....	2.52	1.95	19.....	4.17	3.92	2.01	29.....	1.97	2.42	4.02
10.....	....	2.32	1.91	20.....	3.02	3.08	1.99	30.....	1.90	2.31	3.20
								31.....	1.87	....	2.84

Note.—Observer made no report concerning ice. Relation of gage height to discharge probably not affected by ice during 1911.

Little Bluestone River.

Little Bluestone River drains an area of about 34 square miles. Its entire length by the meanders is about 10 miles. The air line distance between the same points is 5.7 miles. It rises at the southern end of Whiteoak Mountain in the Raleigh-Summers County Line, about 2 miles northwest of the common corner of Mercer, Summers and Raleigh Counties, and flows in a northeastern direction to the mouth of Spicelick Creek, where it deflects to the east and flows in an easterly direction to mouth of Jumping Branch, where it turns to the southeast and flows in a southeastern direction, emptying into Bluestone River at Lilly. From the source to Streeter, the fall is 1110 feet in 3.7 miles or 300.0 feet to the mile. From Streeter to mouth, the fall is about 570 feet in 6.3 miles, or 90.4 feet to the mile. Its principal tributaries are Suck Creek, Jumping Branch and Spicelick Creek.

Mountain Creek.

Mountain Creek has its source near Flattop, in Flattop Mountain, one mile west of the common corner of Raleigh, Mercer and Summers Counties, and flows in a general southern direction for about 3 miles, then it deflects to a general eastern direction, emptying into Bluestone River, just southwest of the Mercer-Summers County Line, 1.3 miles east of Laurel Valley School. Its entire length by its meanders is 8 miles. The air line distance between the same points is 6.1 miles. Its drainage area is 21.6 square miles. The fall from source to mouth of Glade Branch is about 770 feet in 1.3 miles, or 592.3 feet to the mile. From the mouth of Glade Branch to the Bluestone River, the fall is about 995 feet in 6.7 miles, or 148.5 feet to the mile. The principal tributaries of Mountain Creek are North Fork and Coal Branch.

Camp Creek.

Camp Creek has its source in Flattop Mountain, 3 miles west of the common corner of Raleigh, Mercer and Summers Counties, and flows in a southwestern course for about 2 miles

to the mouth of Seng Branch, where it makes a right-angled turn and flows in a general southeastern direction, emptying into Bluestone River about 2.5 miles southeast of Camp Creek. Its entire length by meanders is 12.5 miles. The air line distance between the same points is about 8 miles. It drains an area of 38 square miles. From the source to the mouth of Seng Branch, the fall is about 835 feet in 2 miles, or 417.5 feet to the mile. From the mouth of Seng Branch to the Bluestone River, the fall is about 615 feet in 10.5 miles, or 58.5 feet to the mile.

New River.

New River is formed by the confluence of North Fork and Three Top Creek at Creston, Ashe County, N. C., and flows in a northeastern direction 31 miles through North Carolina; then in a general eastern direction for 12 miles through Virginia; thence through North Carolina 2 miles, crossing the North Carolina-Virginia Line 4 miles due south from Independence, Va.; thence it flows in a general northeastern direction through Virginia 100 miles to Peppers Ferry, where it veers to a general northwestern direction for 50 miles, to the Virginia-West Virginia State Line, crossing the same 4 miles due west from Patterson, West Virginia; thence in a general northwestern direction for 89 miles through West Virginia to Gauley Bridge. Its entire length by the meanders is 284 miles. The air line distance between the same points is 124 miles. From its source to Radford, the fall is 1280 feet in 115 miles, or at the rate of 11.1 feet to the mile. From Radford to Hinton, the fall is 370 feet in 105 miles, or 3.6 feet to the mile. From Hinton to Thurmond, the fall is 305 feet in 39 miles, or 7.8 feet to the mile. From Thurmond to Hawks Nest, the fall is 233 feet in 17.5 miles, or 13.3 feet to the mile. From Hawks Nest to Gauley Bridge, or its mouth, the fall is 132 feet in 7.5 miles, or 17.6 feet to the mile. It flows for about 50 miles along the western edge of the territory reported on in Raleigh, Mercer and Summers Counties.

New River drains all of Shady Spring, Richmond, and a portion of Town Districts, in Raleigh County. It drains all of Jumping Branch District in Summers County, and all of

Jumping Branch District and a portion of Rock District in Mercer County. Its principal tributaries, in the Raleigh, Mercer and Summers area, are Piney, Glade and Meadow Creeks, and Bluestone River.

In order to determine the surface water supply of the Ohio River Basin, the United States Geological Survey established several gaging stations on the many large tributaries of the latter in Virginia and West Virginia. One of these stations is located on New River at Radford, Virginia.

The following interesting data, obtained at Radford, are taken from Water Supply Paper No. 303 of the United States Geological Survey:

"NEW RIVER AT RADFORD, VA.

"**Location.**—At toll highway bridge near the Norfolk & Western Railway station at Radford, Va., 1½ miles below Norfolk & Western Railway bridge and 6 miles below the mouth of Little River.

"**Records available.**—August 1, 1889, to July 15, 1906; May 6, 1907, to December 31, 1911.

"**Drainage area.**—2,720 square miles.

Gage.—Standing chain gage attached to bridge. The United States Weather Bureau gage was originally used at this point, but owing to its inaccessibility it was replaced by a wire gage referred to the same datum February 23, 1900. On December 1, 1903, the wire gage was replaced by a chain gage and the datum lowered 3.41 feet to avoid negative readings.

Channel.—Practically permanent.

Discharge measurements.—Made from the downstream side of the bridge.

Floods.—Maximum gage height, according to United States Weather Bureau, was 37.4 feet September 15, 1879.

Point of zero flow.—A determination by leveling July 17, 1911, indicated that there would be no flow past the gage if the river stage were to fall to 1.0 foot ± 0.3 foot.

Winter flow.—The relation of gage height to discharge is only occasionally affected by ice.

Artificial control.—Power plants 50 miles above station may affect flow to a small extent.

Accuracy.—A good discharge rating curve for this station has been obtained as a result of numerous discharge measurements, but the data in the following tables can not be considered good because of doubt as to the accuracy of the daily gage heights. Gage heights published in the following table represent the means of two readings per day as reported by the observer. During portions of September, October and November, 1911, the gage was read by a substitute gage observer. A comparison of the readings on the United States Geological Survey and the United States Weather Bureau gages at Radford and a gage at Newbern, about 10 or 12 miles above Radford, during this period, indicates that the substitute observer read the Geological Survey gage erroneously on September 24, September 27 to October 16, and October 24 to November 6, 1911. A correction of +0.5 foot, as indicated by the comparison, has been applied to the observed gage heights on the days

in question. As the basis for this correction is not absolute, the discharge values computed therefrom should be used with caution. Four discharge measurements between gage heights 6.0 and 11.0 feet made March 28-29, 1913 (before the preparation of this report), indicate a change in the regimen of the river such that the 1913 discharge rating curve above gage height 5.0 feet will give results about 6 per cent. smaller than those given by the 1911 rating curve for corresponding gage heights. It is possible, though not probable, that this change should apply during 1911, and published values of discharge should be used with caution until verified by discharge measurements below 6.0 feet.

"The following discharge measurement was made by Horton and Bailey: July 17, 1911: Gage height, 3.38 feet; discharge, 1,510 second-feet.

Daily Gage Height, in Feet, of New River at Radford, Va., for 1911.

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.5	5.05	3.6	4.25	4.2	3.8	3.5	3.15	4.63	3.28	3.25	3.02
2.....	5.3	4.6	3.5	4.15	4.3	3.65	3.3	3.08	4.26	3.33	3.06	3.10
3.....	6.3	4.3	3.5	4.05	4.2	3.45	3.25	3.08	3.91	3.75	3.11	3.63
4.....	7.1	4.05	3.5	4.6	4.15	3.55	3.3	3.10	3.60	3.81	3.08	3.61
5.....	5.4	4.0	3.6	5.9	4.0	3.6	3.4	3.69	3.41	3.51	2.99	3.53
6.....	4.7	4.0	3.7	8.1	3.95	3.65	3.6	4.24	3.26	3.43	3.30	3.52
7.....	4.5	3.9	4.1	6.85	4.0	4.2	3.5	3.68	3.00	3.34	3.39	3.62
8.....	4.4	4.0	4.7	6.45	4.0	4.15	4.55	3.50	3.10	3.28	3.75	3.63
9.....	3.9	4.95	5.2	6.2	4.0	3.95	3.75	3.41	3.05	3.44	3.77	3.60
10.....	3.95	5.95	5.95	5.55	4.0	3.7	3.6	3.30	3.15	3.53	3.50	3.56
11.....	3.85	5.2	5.7	5.2	3.85	3.6	3.75	3.20	3.15	3.63	3.29	3.60
12.....	3.65	4.75	5.0	5.0	3.8	4.05	3.55	3.08	3.21	3.64	3.65	3.59
13.....	3.7	4.45	4.75	5.05	3.95	3.6	3.5	3.38	3.11	3.53	3.75	3.60
14.....	3.65	4.35	4.5	5.35	4.6	3.6	3.55	3.49	3.27	3.43	3.57	3.62
15.....	3.7	3.9	4.6	5.85	4.85	3.35	3.55	3.29	3.17	3.44	3.53	4.00
16.....	3.65	4.15	4.35	6.3	4.3	3.35	3.5	3.22	3.00	3.55	3.74	4.55
17.....	3.5	3.95	4.15	5.55	4.05	3.3	3.35	3.17	2.96	3.41	3.75	4.53
18.....	3.6	3.9	4.05	5.1	4.05	3.3	3.4	3.15	2.96	8.11	3.57	4.17
19.....	3.6	4.0	4.1	4.9	4.0	3.35	3.3	3.12	3.05	6.06	3.44	3.93
20.....	3.65	4.0	3.9	4.95	3.8	3.45	3.25	3.09	2.87	4.51	3.80	3.85
21.....	3.65	3.95	4.0	5.15	3.75	3.6	3.25	3.05	2.92	3.96	3.73	3.83
22.....	3.95	3.7	3.9	5.0	3.35	3.55	3.2	2.85	2.99	3.96	3.63	3.94
23.....	4.8	3.6	3.85	4.7	3.7	3.45	3.1	2.96	4.25	4.11	3.63	5.63
24.....	4.65	3.6	3.7	4.5	3.8	3.35	3.1	2.97	3.85	3.51	3.73	5.48
25.....	4.35	3.6	3.8	4.35	3.8	3.45	3.15	2.88	3.29	3.43	3.63	5.22
26.....	4.2	3.7	3.85	4.2	3.75	3.55	3.15	2.95	3.26	3.48	3.75	5.24
27.....	3.95	3.75	4.0	4.2	3.55	3.5	3.06	3.30	3.55	3.31	3.72	5.26
28.....	3.95	3.7	4.35	4.2	3.45	3.85	3.19	3.41	3.57	3.20	3.65	5.18
29.....	4.05	....	4.35	4.15	3.45	4.0	3.11	4.56	3.34	3.32	3.04	4.94
30.....	4.4	....	4.2	4.2	3.5	3.55	3.11	4.36	3.35	3.30	3.15	4.30
31.....	5.4	....	4.2	....	3.55	....	3.18	4.62	....	3.22	....	4.33

Note.—Gage heights Sept. 24, Sept. 27 to Oct. 16, and Oct. 24 to Nov. 6 are 0.5 foot greater than the mean gage height for each day as reported by the gage observer. (See Accuracy.)

Observer made no notes relative to ice. Relation of gage height to discharge probably not affected by ice during 1911.

Daily Discharge, in Second-Feet, of New River at Radford, Va., for 1911.

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1..	4,930	6,980	2,080	4,060	3,890	2,630	1,820	1,060	5,400	1,320	1,260	816
2..	7,950	5,290	1,820	3,720	4,230	2 220	1,360	924	4,090	1,430	888	960
3..	12,100	4,230	1,820	3,400	3,890	1,700	1,260	924	2,960	2,490	979	2,160
4..	15,600	3,400	1,820	5,290	3,720	1,950	1,360	960	2,080	2,660	924	2,110
5..	8,350	3,240	2,080	10,400	3,240	2,080	1,580	2,320	1,600	1,850	764	1,900
6..	5,650	3,240	2,350	20,100	3,080	2,220	2,080	4,030	1,280	1,650	1,360	1,870
7..	4,930	2,930	3,560	14.400	3,240	3,890	1,820	2,300	780	1,450	1,560	2,130
8..	4,580	3,240	5,650	12,700	3,240	3,720	5,110	1,820	960	1,320	2,490	2,160
9..	2,930	6 590	7,560	11,600	3,240	3,080	2,490	1,600	870	1,680	2 550	2,080
10..	3,080	10,600	10,600	8,950	3,240	2,350	2,080	1,360	1,060	1,900	1,820	1,980
11..	2,780	7,560	9,560	7,560	2,780	2,080	2,490	1,150	1,060	2,160	1,340	2,080
12..	2,220	5,840	6,780	6,780	2,630	3,400	1 950	924	1,170	2,190	2,220	2,050
13..	2,350	4,760	5,840	6.980	3,080	2,080	1,820	1,540	979	1,900	2,490	2,080
14..	2,220	4,400	4,930	8,150	5,290	2,080	1,950	1,800	1,300	1,650	2,000	2,130
15..	2,350	2,930	5,290	10,200	6,210	1,470	1,950	1,340	1,090	1,680	1,900	3,240
16..	2,220	3,720	4,400	12,100	4,230	1,470	1,820	1,190	780	1,950	2,460	5,110
17..	1,820	3,080	3,720	8,950	3,400	1,360	1,470	1,090	716	1,600	2,490	5,040
18..	2,080	2,930	3,400	7,170	3,400	1,360	1,580	1.060	716	20,200	2,000	3,790
19..	2,080	3,240	3,560	6,400	3,240	1,470	1,360	998	870	11,100	1,680	3,020
20..	2,220	3,240	2,930	6,590	2,630	1,700	1,260	942	578	4,970	2,630	2,780
21..	2,220	3,080	3,240	7.360	2,490	2,080	1,260	870	652	3,120	2,430	2,720
22..	3,080	2,350	2,930	6,780	1,470	1,950	1,150	550	3,210	3,120	2,160	3,050
23..	6,020	2,080	2,780	5,650	2,350	1,700	960	716	4,060	3,590	2,160	9,270
24..	5,470	2,080	2,350	4,930	2,630	1,470	960	732	2,780	1,850	2,430	8,670
25..	4,400	2,080	2,630	4,400	2,630	1,700	1,060	592	1,340	1,650	2,160	7,640
26..	3,890	2,350	2,780	3,890	2,490	1,950	1,060	700	1,280	1,770	2,490	7,720
27..	3,080	2,490	3,240	3,890	1,950	1,820	888	1,360	1,950	1,380	2,410	7,790
28..	3,080	2,350	4,400	3,890	1,700	2,780	1,130	1,600	2,000	1,150	2,220	7,480
29..	3,400	.....	4,400	3,720	1,700	3,240	979	5,150	1,450	1,400	852	6,550
30..	4,580	.....	3,890	3,890	1,820	1.950	979	4,440	1,470	1,360	1,060	4,230
31..	8,350	.....	3,890	.....	1,950	.....	1,110	5,360	.....	1,190	.....	4,340

Note.—Daily discharge computed from a rating curve well defined between 800 and 17,000 second-feet. (See accuracy.)

Monthly Discharge of New River at Radford, Va., for 1911.

(Drainage area, 2,720 square miles.)

Month.	Discharge in Second-feet.				Run-off (Depth in Inches on Drainage Area).	Accuracy.
	Maximum.	Minimum.	Mean.	Per Square Mile.		
January	15,600	1,820	4,520	1.66	1.91	B.
February	10,600	2,080	3,940	1.45	1.51	B.
March	10,600	1,820	4,070	1.50	1.73	B.
April	20,100	3,400	7,460	2.74	3.06	B.
May	6,210	1,470	3,070	1.13	1.30	B.
June	3,890	1,360	2,160	.794	.89	A.
July	5,110	888	1,620	.596	.69	A.
August	5,360	550	1,660	.610	.70	A.
September	5,490	578	1.680	.618	.69	B.
October	20,200	1,150	2,860	1.05	1.21	C.
November	2,630	764	1,870	.688	.77	B.
December	9,270	816	3,840	1.41	1.63	B.
The year	20,200	550	3,220	1.18	16.09	

Note.—See accuracy in station description.

NEW RIVER AT FAYETTE, W. VA.

Location.—At highway bridge connecting Fayette and South Fayette, W. Va., 850 feet above the mouth of Wolf Creek.

Records available.—July 29, 1895, to May 22, 1901; August 11, 1902, to December 31, 1904; July 16, 1908, to December 31, 1911.

Drainage area.—6,800 square miles.

Gage.—Standard chain gage attached to bridge; datum unchanged since established.

Channel.—Rock bed strewn with large bowlders which cause boils and eddies at high stages.

Discharge measurements.—Made from upstream side of bridge.

Floods.—The flood of 1878 reached a height of about 53 feet as referred to by the present gage datum.

Winter flow.—The relation of gage height to discharge is little if at all affected by ice.

Accuracy.—Errors have entered into many of the gage readings prior to 1908, particularly before the chain gage was installed, November 20, 1903, the original wire gage being frequently many tenths in error. Owing to this cause and to the difficulty in making accurate measurements, all estimates of discharge heretofore published are only fair. Estimates for discharge for 1911 are withheld from publication for the present.

Daily Gage Height, in Feet, of New River at Fayette, W. Va., for 1911.

(A. E. Pierson, observer.)

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1..	8.15	13.55	3.76	6.93	5.45	2.37	1.85	0.09	3.05	0.65	2.08	3.45
2..	12.50	11.23	3.90	6.78	5.72	2.42	1.50	.06	4.60	.85	1.82	3.28
3..	14.75	9.45	3.78	8.00	5.55	2.57	1.23	.04	4.35	5.60	1.68	2.95
4..	18.10	7.92	3.68	12.18	5.29	2.38	1.10	.02	3.55	4.90	1.35	2.82
5..	14.40	7.82	3.48	14.20	4.82	2.34	1.24	.00	2.20	3.50	1.18	2.62
6..	10.68	7.70	9.33	17.63	4.43	2.46	1.97	.12	1.72	2.60	3.02	2.42
7..	7.60	6.70	13.78	16.42	4.17	2.68	1.73	1.52	1.48	2.05	6.20	2.25
8..	6.15	5.48	10.86	14.62	3.95	2.58	1.97	2.55	1.30	2.15	9.72	2.24
9..	5.45	6.88	10.06	14.52	3.72	3.20	2.53	1.95	.92	2.20	8.52	2.20
10..	5.42	8.48	11.40	14.27	3.55	3.16	3.32	1.50	.78	3.75	5.78	2.05
11..	5.15	11.78	13.60	10.97	3.52	2.66	2.93	1.28	1.38	3.40	4.88	2.02
12..	4.42	9.26	11.83	9.22	3.39	2.21	2.73	1.05	1.72	3.50	4.58	2.00
13..	3.52	8.13	10.18	8.19	3.29	2.06	2.23	.85	1.78	3.10	4.58	1.90
14..	3.62	6.73	8.58	7.95	3.15	2.16	1.95	2.38	1.60	2.80	4.54	1.98
15..	6.55	5.98	8.50	8.37	4.09	1.61	1.70	2.05	1.25	2.40	4.48	1.95
16..	5.60	5.33	7.68	12.59	4.85	1.51	1.65	1.60	1.05	2.35	4.38	2.20
17..	5.38	4.78	6.90	12.45	4.07	1.26	1.65	1.38	1.05	3.95	4.80	2.70
18..	5.25	4.38	6.33	9.87	3.39	1.24	1.37	1.18	3.15	11.00	4.20	3.80
19..	4.92	4.20	6.56	8.47	2.99	1.28	1.20	.90	2.50	18.05	4.65	4.75
20..	4.68	5.78	7.53	8.37	2.77	1.44	.95	.55	1.85	10.65	6.00	4.45
21..	4.82	6.03	7.40	9.97	2.55	1.61	.70	.38	1.20	7.50	5.23	3.38
22..	5.70	5.58	6.90	9.92	2.42	1.84	.63	.15	1.00	6.65	4.60	3.05
23..	6.65	5.06	6.63	8.92	2.31	1.78	.53	.05	.90	4.75	3.90	3.62
24..	8.70	4.56	6.00	8.02	2.21	1.74	.40	.12	1.00	4.65	3.50	10.20
25..	7.60	4.18	5.38	7.35	2.29	1.66	.42	.25	1.55	4.45	3.75	9.90
26..	6.65	4.10	4.88	6.45	2.21	1.58	.27	.38	1.55	3.85	3.65	9.40
27..	6.55	3.98	4.50	5.99	2.11	1.78	.23	.38	1.15	3.30	3.85	9.85
28..	7.05	3.90	6.50	5.52	2.03	2.11	.15	.22	1.05	3.38	3.55	9.50
29..	8.55	....	7.42	5.35	1.81	2.04	.05	.30	.90	3.55	3.65	9.15
30..	16.35	....	7.08	5.35	2.07	2.51	.10	1.60	.65	2.18	3.55	8.20
31..	19.58	....	6.93	....	2.18	....	.03	1.85	....	2.28	....	7.30

Note.—No ice reported by the observer. Relation of gage height to discharge probably not affected by ice during 1911.

More than one hundred years ago steps were taken by Virginia to determine if it were feasible to extend a water way or canal from the Atlantic Ocean to the Ohio River.

The following resolution was passed by both Houses of the Assembly of Virginia, February 14, 1814, pertaining to the

improvement of Greenbrier and New Rivers, and reprinted in Vol. III, page 187, Record of Virginia vs. West Virginia, in the Virginia debt case:

"Whereas, it would greatly promote the welfare of this Commonwealth, and the prosperity of our sister States, to form a more intimate connection between the Eastern and Western Waters of the United States; and, with a view to that object, the General Assembly of Virginia at a former session, appointed Commissioners to survey the headwaters of James River and the Great Kanawha, with instructions to ascertain the practicability of extending their navigation to the base of the chain of mountains which divides them, and at the shortest and easiest portage across it; a trust which was accepted and fulfilled, by the Commissioners who acted therein, in a manner that entitles them to the thanks of their country: And, as the result of their labors has never been presented to the Legislature of the Union, nor to the governments of the several States, who cannot but feel an interest in the accomplishment of an enterprise so important to the arts, manufactures, and commerce of the United States—

"Resolved, therefore, That the executive of this commonwealth be, and they are hereby empowered and requested, to cause the Report of the Commissioners to be reprinted, and the Map and References accompanying it to be reduced to a convenient scale, engraved, printed, and annexed to the report; and, reserving two hundred and fifty copies thereof for the use of the General Assembly, to forward a copy to each of the Commissioners whose names are subscribed to the Report, to each member of the Congress of the United States, and to the Executives of the several States and Territories."

This report says the following in regard to New River:

"The New River, or that part of the Great Kanawha which is above the mouth of Gauley, having to search its intricate way, and force a passage through a long chain of lofty and rugged mountains, whose feet it washes, exhibits an almost continued succession of shoals and falls, from which the navigator is sometimes, though rarely, relieved by a fine sheet of deep placid water.

"The difficulties encountered in descending this river were of a character essentially different from those which were experienced in the Greenbrier. Uncommon as had been the drought, the supply of water was abundant. The boat sometimes, though rarely, rubbed upon a shoal; but in every such case it was apparent that a sufficient passage might be opened without much labor or expense. The velocity of the current and the enormous rocks which often interrupt it, the number and magnitude of the rapids and falls, the steepness, cragginess and abruptness of the banks, constitute the great impediments which at present exist to navigation between the mouth of the Greenbrier and the Great Falls of the Kanawha.

"The distance from the mouth of Greenbrier to Bowyer's Ferry is forty miles one quarter and forty-six poles, and the descent is four hundred and sixty-six feet seven inches; that is, eleven feet six inches in each mile. In general, there is much sameness in the appearance of this part of the river. Long rapids, frequently terminated by a fall of from five to ten feet, in a distance of ten, twenty, thirty, and sometimes a greater number of poles; an intervening space, sometimes

more, sometimes less considerable, of swift or smooth water; rocks, sometimes above the surface, sometimes near it, so as to require great caution to save a boat from dashing on them; a copious stream, with a current commonly impetuous, constitute its leading characteristics.

"Falls too great to come within this general description will be particularly noticed.

"Brooks Falls are about four miles and one-fourth below the mouth of Greenbrier. The water descends thirteen feet seven inches in fourteen poles. The boat was navigated through this place.

"A much more formidable obstruction is the falls at Richmond's Mill. These are designated in the neighborhood by the name of the 'Great Falls of New River,' but are generally called at a distance 'Lick-Creek Falls.'

"At this place the water may with propriety be said to fall perpendicularly twenty-three feet. For this distance the sheet which dashes over the summit is intercepted only by huge fragments of broken rock, which, having been successively disjointed from the brink of the precipice, have fallen into the foaming basin below, where piled on each other, they form one or two benches that break the cataract. A small distance lower down is another fall of three or four feet.

"Here, for the first time, the boat was taken out of the water and let down by skids.

"The ground along which a canal may be carried around these falls, pursuing the course of Richmond's mill-race, was measured and the elevation taken. The descent was found to be twenty-two feet nine inches, in one hundred and eighty-one poles.

"This estimate excludes a part of the falls, between five and six feet of which are just above the head of Richmond's mill-race.

"The bottom of the river for some distance above these falls is a hard rock, often appearing above the surface, and much covered with movable stones, some of which are very large. The bottom of the mill-race appears to be of the same description.

"From Bowyer's Ferry to the Falls of the Great Kanawha, was estimated at nineteen miles and fifty-eight poles, in which distance the river falls three hundred and thirty-one feet; that is, seventeen feet to a mile. The honorable the legislature will perceive that below the ferry the descent, in the same distance, is greater than above. For a part of this space the scene is awful and discouraging. The vast volume of water which rolls down New River, and which, far above the ferry, often spreads, without becoming shallow, over a bed three or four hundred yards wide, is seldom more than one hundred or one hundred and fifty yards wide. In some places, for a mile or more in continuation, it is compressed by the mountains on each side, into a channel of from twenty to sixty yards wide; and even these narrow limits are still more narrowed by enormous rocks which lie promiscuously in the bed of the river, through which it is often difficult to find a passage wide enough for the admission of a boat. In some places the bank is formed of rugged and perpendicular cliffs or entire rock, which appear to be twenty, thirty and forty feet high; in others, enormous, but unconnected, rocks dip into the water.

"There are unequivocal indications of the river's having risen, in these narrows, from thirty to forty feet perpendicularly.

"Immediately above the mouth of Gauley, the river opens and presents a beautiful sheet of deep smooth water, which is succeeded by the rocks over which it dashes, and forms the Great Falls of Kanawha. The height of these falls is twenty feet four inches. With its name the river loses its wild and savage aspect. It is no longer confined by

rugged cliffs, by mountains barely separated from each other, nor interrupted by enormous masses of rocks which are scarcely to be avoided.

"Within a short distance above the falls, the current is not unmanageably swift, nor the rocks over which it passes uneven. Below, quite to the rocks which have fallen from the brink over which the cataract rushes, is a deep smooth and beautiful basin. The river is so wide as to rise, in the greatest freshets, only six or seven feet. The falls themselves constitute the impediment, and the only impediment at this place.

"Your commissioners have deemed it proper to state in their full strength the difficulties which are to be surmounted in opening the intercourse between this part of the State of Virginia and the western country; and to put the legislature, as far as is possible, in possession of the testimony on which their opinion is formed, as well as of their opinion. If, misguided by their conviction of the importance of the object, they are too sanguine in their hopes of its accomplishment, the facts now communicated will enable the General Assembly to correct the mistaken conclusions which have been drawn, and to determine on the course which will best promote the interests of the public."

During the past two years considerable interest has been taken in the development of the water power of New River, and building locks and dams. Several sites have been selected, heights of dams proposed, but thus far no construction work has been done (1915). One site has been proposed just below the mouth of Bluestone. Another site is located at the Sandstone Falls, 8 miles north of Hinton. Here the water passes over the Hinton Sandstone, falling a vertical distance of 26 feet in a few hundred yards.

TOPOGRAHY OF THE LAND.

The northern portion of Raleigh County is a high, dissected plateau, from 2500 feet above tide on Kayford Mountain to 3300 feet on Pilot Knob, along the Raleigh-Wyoming County Line. Water erosion has reduced this original plateau all to slope, the streams flowing in deeply cut "V"-shaped valleys. Numerous ridges ranging in elevation from 2500 to 3200 feet above sea level, capped with the most resistent layer of sandstone (East Lynn), remain as evidence.

In the northern and central portions of Raleigh County, the Kanawha Group has been entirely eroded, while in the southern part, along the entire length of Raleigh County, the Flattop Mountain is capped, at numerous points, with the Guyandot Sandstone.

RIVER TERRACES.

No decided river terraces have been formed along the headwaters of Coal or Guyandot Rivers. There are no traces of terraces along New River except at the junction of the larger streams, like the Gauley, Greenbrier, Bluestone, etc., since erosion appears to have removed them entirely along the steep slopes of the New River gorge.

PART II.

The Geology of the Raleigh, Mercer, Summers Area.

CHAPTER III.

STRUCTURE.

METHOD OF REPRESENTING STRUCTURE.

There are two methods that can be used in representing geological structure. One of these is by cross sections at right angles to the strata, which shows the rocks as they would appear if a deep canal or section were dug perpendicularly across the entire area under discussion. This method can be used where the dip of the rocks is very heavy and is perceptible to the eye, but in the Raleigh-Mercer-Summers area, it would not be practical nor satisfactory without greatly exaggerating the vertical scale of the cross section in comparison to the horizontal scale; also this method would give an idea of the structure along certain lines only, and would not give the slope of the arches or basins. This is of great value in the commercial development of the area, for both future mining of the coal, and the exploitation of any oil and gas territory that might possibly exist.

The method of representing structure which has been adopted by the West Virginia Geological Survey within areas of moderate dips consists in the representation by contour

lines of the position of some particular stratum. This stratum is generally the one that is well known throughout the area by its exposure in outcrop, and its relation to some other bed above or below it, or its constant use as a key-rock by the drillers for oil and gas. These contour lines show in a general way the form and the size of the folds into which the key-stratum has been distorted and its altitude above the level of the sea at all points. In the Raleigh-Mercer-Summers area, the writer has taken the base of the **Eagle Coal** as the **key-rock** for that part of Raleigh County **north** of a line extending in a southwest and northeast direction from a point near Herberton, where the Raleigh-Fayette County Line crosses Paint Creek, to a point on Guyandot Mountain at Clear Fork Gap, two miles west of Bolt P. O. **South** of this line, the writer has taken the base of the **Sewell Coal** as the **key-rock,** to a line extending in a southwest and northeast direction from a point at Royal, on New River, in the northern part of Raleigh County, southwest across the county to a point where the Raleigh-Wyoming County Line crosses Slab Fork, near Hotchkiss P. O., and beyond that, the base of the **Pocahontas No. 3 Coal** is taken as the **key-rock** for the southern part of the Raleigh-Mercer-Summers area.

The altitude of the **Eagle Coal** has been determined from its elevation at different points on the outcrop in the county, along the waters of Marsh Fork, Clear Fork and their tributaries, also at different points along Paint Creek, where numerous prospect openings have been made in the outcrop of this seam. After the elevation of the **Eagle Coal** had been determined in many places, points of equal elevation were connected by contour lines. For illustration, all points having an elevation of 1200 feet above mean tide are connected by a line which then becomes the 1200-foot contour line. In the same manner all points having an elevation of 1225 feet are connected by 1225-foot contour lines, and so on. Contour lines, as drawn, show a vertical distance of 25 feet throughout the entire area. These are printed on the structural and economic map accompanying this Report in a separate case, and show not only the approximate elevation of the base of the Eagle Coal above sea level, but also the horizontal con-

tours of the troughs and arches and the depths of the beds. Note that the position of the Eagle Coal, whether above or below water level at any point, is obtained by subtracting its elevation from the elevation of the surface, at the same point as shown by the topographic map.

The altitude of the base of the **Sewell Coal** has been determined from its elevation at different points on the outcrop in the area; also from the records of numerous diamond core test holes that have been drilled to determine the depth and thickness of the coal beds throughout the central part of the area, the elevation of the surface of these test holes having been determined either by spirit level or aneroid, and then calculating the tidal elevation of the **Sewell Coal** from these records. The same method has been pursued in regard to the tidal elevation of the base of the **Pocahontas No. 3 Coal.**

As a rule these structure contours are only approximately correct, from the very nature of the data from which they are made, being estimated on the assumption that small areas of the rocks maintain a uniform thickness, when it is a well known fact that in many places the interval between two easily determined strata will vary many feet in a short distance. It therefore follows that the position of the contour will be in error the amount the increase or decrease in thickness varies from the calculated thickness. Another cause of error is in the method of determining the elevation of the outcrop of the key-stratum, or the tops of many of the core drill holes, drilled down through same. In many cases these altitudes were determined by spirit level, but the great majority were determined with aneroid barometer. The aneroid was checked as frequently as possible on the spirit levels of the U. S. Geological Survey left at conspicuous points along the public highways in the preparation of their accurate topographic maps of the Raleigh-Mercer-Summers area, in cooperation with the State of West Virginia. In this way the instrumental error is kept down. However, the errors may accumulate or may compensate one another, but in any case, it is believed that their sum is less than one contour level, that is, less than 25 feet, and over much of the area of Raleigh,

Mercer and Summers Counties, the possible variations from actual altitude will probably not exceed 10 to 20 feet.

DETAILED GEOLOGICAL STRUCTURE.

The Raleigh-Mercer-Summers area is located east of the **Coalburg Syncline,** which passes in a southwest and northeast direction from the Kanawha River to Tug River. No decided synclines or basins exist within the area, except a few small ones that occur occasionally, and the purely local ones encountered in many of the mines.

The following is a list of the most important **anticlines** and **synclines** in the Raleigh-Mercer-Summers Area:

Anticlines.	**Synclines.**
Pineville.	Pineville.
Mullens.	**Mullens.**
Dry Fork.	Weyanoke.

The slope and location of the above structural forms are all indicated on the map accompanying this Report. A brief description will be given of these arches and troughs:

Pineville Anticline.—The Pineville Anticline of Hennen[1] takes its name from the county seat of Wyoming County, and extends in a northeast direction from the Guyandot River, crossing the Raleigh-Wyoming County Line one-half mile southeast of Clear Fork Gap and two miles west from Bolt P. O. It extends N. 45° E. for about 4 miles in Raleigh County and gradually dies out when it reaches Sandlick Creek.

Mullens Anticline.—The Mullens Anticline of Hennen[2] extends from Mullens in Wyoming County in a northeast direction into Raleigh County on the divide between Guyandot River and Slab Fork, crossing the Raleigh-Wyoming County Line 2.5 miles east of Maben, and 3 miles south of Hotchkiss. It extends N. 34° E. 3 miles into Raleigh County and gradually dies out on the divide between Winding Gulf and Slab Fork.

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[1]Ray V. Hennen, Wyoming-McDowell Report, W. Va. Geol. Survey, pp. 38-9; 1915.

[2]Ray V. Hennen, Wyoming-McDowell Report, W. Va. Geol. Survey; pp. 39-40; 1915.

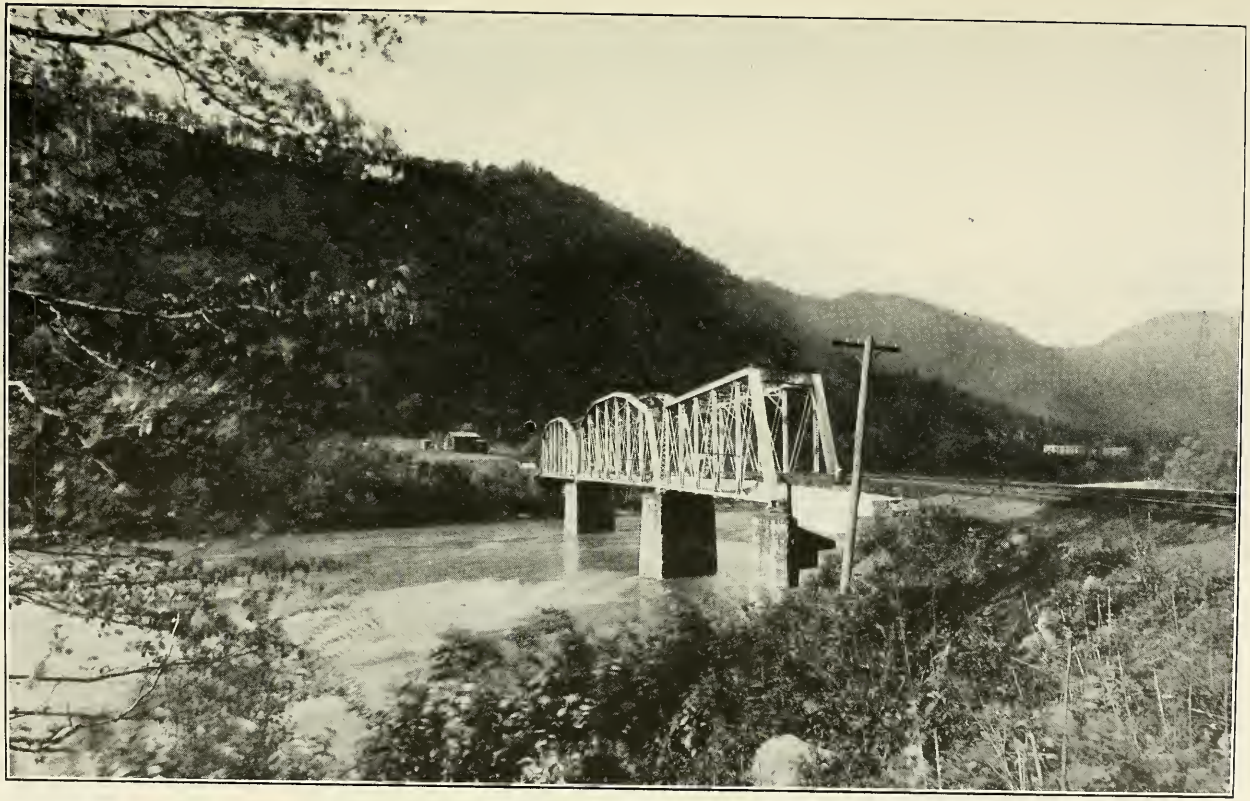

PLATE III.—Chesapeake and Ohio Railway bridge across New River at Prince; New River Group in summits; Mauch Chunk Shales below.

Dry Fork Anticline.—The Dry Fork Anticline of White[3] extends in an eastern direction from McDowell County through the northern part of Clear Fork District to Tazewell County, Virginia, crossing the Virginia-West Virginia State Line, 1.5 miles northwest of Bluestone Junction. It extends eastward into Mercer County 2 miles to Bluestone River at Bramwell.

Pineville Syncline.—The Pineville Syncline of Hennen[4] parallels the Pineville Anticline, and crosses the Raleigh-Wyoming County Line one-half mile southeast of Skinned Poplar Gap, and from there it extends N. 33° E. 3.5 miles to Marsh Fork, where it gradually dies out.

Mullens Syncline.—The Mullens Syncline of Hennen[5] extends in a northeastern direction from Guyandot River and crosses the Raleigh-Wyoming County Line one mile northwest of Stonecoal Junction. From thence it extends N. 27° E. for about 5 miles along Winding Gulf where it gradually dies out.

In addition to the anticlines and synclines already enumerated, there are a considerable number of smaller ones that can not be shown on the structural map of this Report, where the structure is based upon 25-foot contours; in fact, it has been proved in the operation of many mines that each mine has its local "dips" and "rises", which can only be shown on structural maps with 1- to 5-foot contours.

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[3]I. C. White, Vol. II(A), W. Va. Geol. Survey, pp. 18-19; 1908.

[4]Ray V. Hennen, Wyoming-McDowell Report, W. Va. Geol. Survey, p. 43; 1915.

[5]Ray V. Hennen, Wyoming-McDowell Report, W. Va. Geol. Survey; pp. 43-4; 1915.

CHAPTER IV.

STRATIGRAPHY---GENERAL SECTIONS.

The outcropping rocks of the Raleigh-Mercer-Summers Area are included in the Pennsylvanian and the upper part of the Mississippian of the Carboniferous System. There are Quaternary deposits along the streams and test wells for oil and gas have been drilled to the Devonian. Their succession and sub-divisions found on the surface and in borings in the area are as follows:

Pennsylvanian.	Allegheny Series.
	Pottsville Series. — Upper or Kanawha Group.
	Pottsville Series. — Middle or New River Group.
	Pottsville Series. — Lower or Pocahontas Group.
Mississippian.	Mauch Chunk Shales.
	Greenbrier Limestone.
	Pocono Sandstones.
Devonian.	Catskill Sandstones.
	Chemung Series.

The Quaternary rocks are only present along the streams, represented by unconsolidated clays, gravel and sand beds, and comprise the alluvial soils described by Mr. W. J. Latimer in the accompanying Soil Report.

The highest rocks of the Pennsylvanian found in the three counties are those of the Allegheny Series. This series, which may have once covered the northwestern part of Raleigh County, all of Marsh Fork and Clear Fork Districts, has been almost entirely eroded—only a few remnants of it remaining. These remnants occur on the highest points of Kayford, Coal River and Guyandot Mountains. The outcrop of this series is shown on Map II and will be discussed on subsequent pages of this volume. The lowest surface rocks of the area are rep-

resented by the red shales, limestones, brown and green sandstones of the Mauch Chunk Series that outcrop along the New and Bluestone Rivers.

The Kanawha Group or Upper Pottsville Series covers the northwestern part of Raleigh County, and will be discussed in Chapter VI.

A few general sections will now be given, illustrating the order and character of the several formations composing the rock column, made from exposures on the crop and from records of the numerous borings for coal, oil and gas throughout the county, some of which penetrate into the underlying formations of the Mississippian and Devonian.

RALEIGH COUNTY SECTIONS.

CLEAR FORK DISTRICT.

Clear Fork District occupies the northwestern portion of Raleigh County, and the tops of the mountains are capped with the Allegheny Series, from one of the summits of which the following section was measured near Dorothy, with hand level by Krebs and Teets, descending northward from a high summit along the spur of a ridge to Dorothy Mine, thence along the incline to Clear Fork and joined to Diamond Core Test Hole No. 1 (1) at Dorothy.

Dorothy Section, Clear Fork District.

	Thickness.		Total.		
Allegheny Series (244′)	Ft.	In.	Ft.	In.	
Sandy shale and sandstone	50	0	50	0	
Sandstone and concealed, **East Lynn**	75	0	125	0	
Dark shales	10	0	135	0	
Coal, Upper Kittanning ? (No. 5 Block)	9	8	144	8	144′ 8″
Sandy shale and concealed	35	4	180	0	
Coal blossom, Middle Kittanning	4	0	184	0	
Sandy shale and concealed	60	0	244	0	
Kanawha Group (1461′ 11″)					
Sandstone, **Homewood**, massive	156	0	400	0	
Coal, Stockton-Lewiston	5	0	405	0	
Sandstone and concealed, **Coalburg**	95	0	500	0	
Sandy shale and concealed, bench	5	0	505	0	
Sandstone and concealed	79	0	584	0	
Coal, Buffalo Creek	1	6	585	6	
Sandstone and concealed	48	6	634	0	
Dark shale	1	0	635	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, Winifrede (Dorothy)	10	0	645	0	500′ 4″
Dark shale	8	6	653	6	
Coal and slate	0	6	654	0	
Dark shale	2	4	656	4	
Limestone, dark gray, impure	0	8	657	0	
Dark sandy shale	8	6	665	6	
Coal, Lower Winifrede, splint	1	6	667	0	
Sandy shale	15	0	682	0	
Coal and slate	4	2	686	2	
Sandstone, massive	45	10	732	0	
Sandy shale and sandstone	11	0	743	0	
Gray, limy shale	11	0	754	0	
Gray, limy shale, marine fossils	3	0	757	0	
Limestone, Indian Gap, Winifrede? dark gray, marine fossils	1	0	758	0	91′ 0″
Gray, limy shale	6	0	764	0	
Limestone, impure	3	0	767	0	
Sandstone	19	6	786	6	
Coal and slate, Chilton	1	6	788	0	30′ 0″
Shale, gray	3	0	791	0	
Limestone, impure	1	0	792	0	
Sandstone, massive	42	6	834	6	
Coal, dirty, reported	1	6	836	0	
Sandstone, massive	14	0	850	0	
Coal, gas	1	0	851	0	
Shale, gray	8	0	859	0	
Coal, splint	1	0	860	0	
Shale, gray	4	0	864	0	
Coal, gas...0′ 8″ Slate .....0 1 Coal, gas...0 2 } Little Chilton	0	11	864	11	76′ 11″
Shale, dark gray	5	1	870	0	
Sandstone, Hernshaw, massive	40	0	910	0	
Concealed	2	0	912	0	
Coal, Hernshaw, splint	2	0	914	0	49′ 1″
Shale, gray	1	0	915	0	
Sandstone, flaggy	34	0	949	0	
Shale, gray	1	0	950	0	
Shale, dark gray	1	3	951	3	
Coal, Dingess, gas	2	9	954	0	
Shale, gray	3	0	957	0	
Limestone, Dingess, impure	4	0	961	0	
Shale, gray, limy	7	0	968	0	
Coal	0	1	968	1	
Shale, Dingess, gray, limy, marine fossils	0	11	969	0	55′ 0″
Shale, dark	1	0	970	0	
Limestone, dark gray	2	0	972	0	
Shale, gray	13	0	985	0	
Sandstone, massive, with coal streaks	60	0	1045	0	
Shale, Seth, gray, limy, marine fossils	3	0	1048	0	79′ 0″
Shale, dark gray, limy, full of iron ore nodules	32	0	1080	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, gas.....0′ 10″					
Slate 0 1					
Coal, splint...1 7					
Slate 0 1					
Coal, splint...1 2					
Shale, gray...2 3 } Cedar Grove (Thacker)....	8	11	1088	11	40′ 11″
Coal, splint...0 2					
Slate 0 1					
Coal, splint...0 8					
Slate 1 0					
Coal, splint...1 0					
Shale, sandy, and concealed.....	57	1	1146	0	
Shale, gray, full of plant fossils.....	7	6	1153	6	
Coal, Campbell Creek (No. 2 Gas), Upper Bench, gas.....	2	6	1156	0	67′ 1″
Concealed	15	0	1171	0	
Sandstone, flaggy.....	22	0	1193	0	
Coal .....1′ 11″					
Slate .....0 1 } Campbell Creek (No. 2 Gas),					
Coal, gas.....0 10 } Lower Bench.	3	10	1196	10	40′ 10″
Coal, impure..1 0					
Shale, gray.....	2	2	1199	0	
Sandstone	22	0	1221	0	
Shale, sandy.....	20	0	1241	0	
Concealed	33	5	1274	5	
Coal, Powellton, gas.....	1	7	1276	0	
Shale, dark, sandy.....	40	0	1316	0	
Limestone, **Stockton**, dark gray.....	1	0	1317	0	
Shale, sandy, gray.....	16	0	1333	0	
Sandstone, ferriferous.....	3	0	1336	0	
Shale, dark.....	0	11	1336	11	
Coal, gas.....0′ 10″					
Slate .....0 1 } Eagle.....	4	1	1341	0	144′ 2″
Coal, gas.....3 2					
Slate, dark.....	1	0	1342	0	
Sandstone, **Decota**, massive.....	19	7	1361	7	
Coal, gas.....1′ 0″					
Slate 1 1					
Coal, gas.....1 7 } Little Eagle....	3	5	1365	0	24′ 0″
Slate 0 2					
Coal, gas.....0 7					
Sandy shale.....	24	0	1389	0	
Sandstone, massive.....28′					
Sandstone, shelly.....16 }	88	0	1477	0	
Sandstone, flaggy.....44					
Shale, sandy.....	16	0	1493	0	
Sandstone	4	0	1497	0	
Shale, dark.....	4	4	1501	4	
Limestone, **Eagle**, dark gray, impure..	0	8	1502	0	137′ 0″
Shale, dark.....	5	0	1507	0	
Sandstone, massive, coarse grained...	22	0	1529	0	
Shale, dark, sandy.....	20	0	1549	0	
Concealed	14	0	1563	0	
Shale, gray.....	14	0	1577	0	
Coal, Lower War Eagle, gas.....	2	0	1579	0	77′ 0″
Sandstone, **Upper Gilbert**.....	6	9½	1585	9½	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal, gas..... 0′ 5½″ Slate ..... 0 0½ Coal, gas..... 0 6 Slate ..... 0 0½ Coal ..... 0 2 Sandstone, dark gray .....11 0 Shale, gray..... 5 6 Coal, gas..... 0 11 Slate ..... 0 1 Coal, gas..... 0 6	Glenalum Tunnel.	19	2½	1605	0	26′ 0″
Limestone, impure.....		2	0	1607	0	
Shale, gray, limy.....		21	0	1628	0	
Shale, Dorothy, gray, marine fossils..		2	0	1630	0	25′ 0″
Shale, gray.....		6	0	1636	0	
(Level of railroad at Dorothy, Elevation 954′ L.)						
Thence continuing with Diamond Core Test Hole No. 1 (1):						
Slate		42	3	1678	3	
Slate and shale.....		16	2	1694	5	
Slate		11	5	1705	10	
Coal and bone, Gilbert.....		0	1	1705	11	75′ 0″
New River and Pocahontas Groups (797′ 9″)						
Sandstone		7	11	1713	10	
Shale, hard.....		26	5	1740	3	
Slate, sandy.....		21	3	1761	6	
Slate		1	9	1763	3	
Coal, Douglas.....		0	4	1763	7	57′ 8″
Fire clay.....		2	0	1765	7	
Slate		4	1	1769	8	
Sandstone		17	2	1786	10	
Shale		1	5	1788	3	
Coal and bone...0′ 4″ Coal 0 9	Lower Douglas...	1	1	1789	4	25′ 9″
Slate		1	0	1790	4	
Shale		2	3	1792	7	
Sandstone, Panther.....		22	2	1814	9	
Sandy slate.....		51	9	1866	6	
Sandstone		6	1	1872	7	
Sandstone, hard.....		44	4	1916	11	
Shale		8	10	1925	9	
Sandstone, hard.....		1	4	1927	1	
Slate		11	0	1938	1	
Shale		13	8	1951	9	
Sandstone and coal streaks.....		7	6	1959	3	
Sandstone, hard.....		49	1	2008	4	
Very hard sandstone.....		82	11	2091	3	
Sand shale.....		9	2	2100	5	
Hard shale and sandstone.....		12	9	2113	2	
Slate		2	4	2115	6	
Coal, Sewell, gassy.....		0	1	2115	7	326′ 3″
Fire clay.....		1	7	2117	2	
Sandstone		13	10	2131	0	
Sandstone and shale.....		7	9	2138	9	
Shale		5	3	2144	0	

		Thickness. Ft.	In.	Total. Ft.	In.
Slate, sandy		37	10	2181	10
Shale, sandy		8	6	2190	4
Sandstone		1	0	2191	4
Shale		0	8	2192	0
Sandstone		0	9	2192	9
Shale		6	2	2198	11
Sandstone		0	6	2199	5
Shale		4	0	2203	5
Sandstone		1	5	2204	10
Shale		4	1	2208	11
Sandstone, hard 15′ 2″ Sandstone, very hard .....152 0 Sandstone, conglomerate.. 7 0 Sandstone, very hard ..... 10 8 Sandstone, conglomerate.. 16 4 Sandstone, very hard ..... 10 7 Sandstone, conglomerate.. 0 11 Sandstone, very hard ..... 21 11 Sandstone, conglomerate.. 2 3 Sandstone, very hard 110 0	Raleigh and Quinnimont..	246	10	2455	9
Coal .....0′ 5″ Sandstone .....0 1 Coal 0 3	Fire Creek..	0	9	2456	6
Sandstone, conglomerate.. 1′ 1″ Sandstone, very hard ..... 3 9 Shale and hard sandstone... 2 0 Sandstone, very hard 40 3	Flattop Mountain?.	47	1	2503	7

The interval between the Lower Kittanning Coal and the Winifrede seam is about 50 feet too great, owing to the rapid rise of the strata to the southeast. The interval between the Winifrede Coal and the Lower War Eagle Coal is from 50 to 75 feet too much on account of the rise of the strata. The coal encountered at 2115 feet is possibly the Sewell, and this would make the interval between the Eagle and the Sewell Coals 774 feet 7 inches at this point. The coal encountered at 2455 feet 9 inches is possibly the Fire Creek Coal. The core test hole indicates that there is no coal of commercial value in

the Sewell or Fire Creek beds at this point, and simply confirms the conclusions of I. C. White, expressed many years ago; viz, that the New River and Pocahontas Coal beds thin away westward soon after they dip below water level.

Several years ago, Mr. J. C. Rawn, then general manager of the Solvay Collieries Company, had a trench dug from the top of Lick Knob on the Raleigh-Fayette County Line, northward to Milburn Creek at Kingston P. O., exposing 27 different beds of coal. A hand level section was taken at this point by Teets, descending to Milburn Creek and joined to Gallego Diamond Core Test Hole No. 1 (189), at the mouth of Rattlesnake Run of Paint Creek, 1.5 miles north of Kingston P. O., giving the following results:

Section 1 Mile North of Kingston P. O., Fayetteville District, Fayette County.

Pennsylvanian (2865′)	Thickness.		Total.		
Allegheny Series (90′)	Ft.	In.	Ft.	In.	
Sandy shale and concealed	83	0	83	0	
Coal, No. 5 Block	7	0	90	0	90′ 0″
Kanawha Group (1475′)					
Sandstone	74	0	164	0	
Coal, Stockton "A"	6	0	170	0	80′ 0″
Sandstone, Lower Homewood	48	4	218	4	
Coal, Stockton-Lewiston, Upper Bench	1	8	220	0	50′ 0″
Sandy shale and concealed	6	8	226	8	
Coal, Stockton-Lewiston, Lower Bench	4	4	231	0	10′ 0″
Sandstone and sandy shale	155	6	386	6	
Coal, Coalburg	3	6	390	0	160′ 0″
Sandy shale	9	0	399	0	
Coal, Little Coalburg	1	0	400	0	10′ 0″
Sandstone, Lower Coalburg	37	8	437	8	
Coal, Winifrede, Upper Bench	2	8	440	4	40′ 4″
Sandy shale	12	4	452	8	
Coal, Winifrede, Lower Bench	2	4	455	0	
Sandy shale	59	4	514	4	
Coal, Chilton "A"	0	8	515	0	60′ 0″
Sandy shale and concealed	127	0	642	0	
Coal, Lower Chilton	3	0	645	0	130′ 0″
Sandy shale	36	10	681	10	
Coal, Hernshaw	3	2	685	0	
Sandstone and sandy shale	56	11	741	11	
Coal, Williamson	3	1	745	0	60′ 0″
Sandy shale	9	2	754	2	
Coal	0	10	755	0	
Sandstone and sandy shale	118	4	873	4	
Coal, Alma, Upper Bench	1	8	875	0	
Sandy shale	7	10	882	10	
Coal, Alma, Lower Bench	2	2	885	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, **Peerless**, massive	51	8	936	8	
Coal, Campbell Creek (No. 2 Gas)	3	4	940	0	55′ 0″
Sandy shale and concealed	34	4	974	4	
Coal	0	8	975	0	
Sandy shale	33	10	1008	10	
Coal	1	2	1010	0	
Sandstone, **Brownstown**, massive	23	0	1033	0	
Coal, Powellton "A"	2	0	1035	0	
Sandy shale	4	4	1039	4	
Coal, Powellton	5	8	1045	0	105′ 0″
Sandy shale and concealed	78	6	1123	6	
Coal, Matewan	1	6	1125	0	
Sandstone, **Eagle**	35	0	1160	0	
Shale, sandy, slaty	7	3	1167	3	
Coal, Eagle	7	9	1175	0	130′ 0″
Sandstone and sandy shale	167	6	1342	6	
Coal, Cedar	2	6	1345	0	170′ 0″
Sandy shale	27	8	1382	8	
Coal, Little Cedar	2	4	1385	0	
Sandy shale and sandstone	27	5	1412	5	
Coal, Lower War Eagle	2	7	1415	0	
Sandstone and sandy shale	84	7	1499	7	
Coal, Glenalum Tunnel	0	5	1500	0	
Sandstone and sandy shale	62	0	1562	0	
Coal, Gilbert	8	0	1565	0	150′ 0″
New River and Pocahontas Groups (1300′)					
Sandstone, sandy shale and slate	340	2	1905	2	
To top of core test hole at mouth of Rattlesnake Run, thence with core test hole, elevation, 1210′ B.:					
Surface	12	0	1917	2	
Shale	14	0	1931	2	
Sandstone	3	0	1934	2	
Coal, Sewell	0	10	1935	0	
Sandstone	2	0	1937	0	
Shale, sandy	6	0	1943	0	
Sandstone	16	0	1959	0	
Slate	1	0	1960	0	
Shale, sandy	1	11	1961	11	
Shale, dark	9	0	1970	11	
Shale, sandy	1	7	1972	6	
Shale, dark	2	0	1974	6	
Sandstone, hard, flinty	3	4	1977	10	
Shale, sandy	1	2	1979	0	
Sandstone, hard, broken	52	0	2031	0	
Shale, dark, sandy	8	6	2039	6	
Slate, dark	7	3	2046	9	
Sandstone, hard, **Upper Raleigh**	43	2	2089	11	
Shale, dark	0	1	2090	0	
Sandstone, hard, **Lower Raleigh**	70	6	2160	6	
Sandstone, conglomerate, **Lower Raleigh**	7	0	2167	6	
Coal, Beckley, dirty	1	0	2168	6	
Sandstone, brown	4	6	2173	0	
Sandy shale, hard	9	6	2182	6	

	Thickness. Ft.	In.	Total. Ft.	In.
Shale, dark, sandy	14	0	2196	6
Shale, hard, sandy	29	0	2225	6
Sandstone, hard	1	0	2226	6
Shale, hard, sandy	2	0	2228	6
Sandstone, hard	4	0	2232	6
Shale, hard, sandy	3	6	2236	0
Sandstone, hard	14	0	2250	0
Sandstone, conglomerate	11	0	2261	0
Sandstone, hard	11	0	2272	0
Sandstone, black shale and coal streaks	56	0	2328	0
Sandstone, conglomerate	9	0	2337	0
Dark shale	2	0	2339	0
Sandstone, hard	3	0	2342	0
Sandstone, conglomerate	21	0	2363	0
Shale, dark	8	6	2371	6
Shale, sandy	2	6	2374	0
Sandstone, hard	43	0	2417	0
Shale, blue	1	0	2418	0
Sandstone, hard	35	6	2453	6
Sandstone, conglomerate	0	6	2454	0
Sandstone, hard	4	0	2458	0
Sandstone, conglomerate	23	0	2481	0
Sandstone, hard	21	0	2502	0
Coal and dark shale	0	4	2502	4
Shaly clay	0	3	2502	7
Shale, sandy	14	11	2517	6
Shale, dark	4	3	2521	9
Shale and coal	1	0	2522	9
Shale, dark	0	3	2523	0
Shale, sandy	8	0	2531	0
Sandstone	31	0	2562	0
Sandstone with shale partings	1	0	2563	0
Sandstone	30	0	2593	0
Sandstone with slate seam	28	6	2621	6
Sandstone	9	6	2631	0
Sandstone, conglomerate	0	6	2631	6
Sandstone	7	0	2638	6
Shale, dark	9	6	2648	0
Sandstone	2	0	2650	0
Sandstone with shale spots	6	0	2656	0
Sandstone	29	0	2685	0
Shale, dark and sandy	169	0	2854	0
Sandstone, hard	11	0	2865	0
Mississippian (40′)				
Limestone, bastard, conchoidal	11	0	2876	0
Lime and shale, mixed	18	0	2894	0
Red shale	3	0	2897	0
Green lime	3	0	2900	0
Red shale to bottom	5	0	2905	0

The foregoing section was taken to the dip, so that the thickness of the Pottsville Series, 2775 feet, is too great.

MARSH FORK DISTRICT.

Marsh Fork District lies west of Clear Fork and Trap Hill Districts, and is in the northwestern part of Raleigh County, Cherry Pond Mountain forming the dividing line between this district and Boone County. Hazy Creek heads up behind Shumate Creek, both flowing into Marsh Fork, and they are about one mile apart at their mouths. A very high ridge divides their headwaters.

The following aneroid section was obtained by Krebs, descending from a high summit between the headwaters of these two creeks, northeastward to Shumate Creek, one mile south of Launa P. O.:

Section 1 Mile South of Launa P. O., Marsh Fork District.

	Thickness.		Total.		
Allegheny Series (190′)	Ft.	In.	Ft.	In.	
Sandy shale and concealed	140	0	140	0	
Coal, No. 5 Block	5	0	145	0	145′
Sandy shale and concealed	45	0	190	0	
Kanawha Group (1370′)					
Sandstone, **Homewood**, gray buff	60	0	250	0	
Sandy shale and concealed	50	0	300	0	
Sandy shale, **Stockton-Lewiston Coal horizon**	5	0	305	0	160′
Sandy shale and concealed	75	0	380	0	
Bench, **Coalburg Coal horizon**	10	0	390	0	85′
Sandy shale and concealed	130	0	520	0	
Concealed, bench, **Winifrede Coal horizon**	10	0	530	0	140′
Sandstone and concealed	140	0	670	0	
Bench	10	0	680	0	
Sandstone and concealed	80	0	760	0	
Bench, **Chilton Coal horizon**	5	0	765	0	245′
Sandy shale and concealed	165	0	930	0	
Bench, **Alma Coal horizon**	5	0	935	0	170′
Sandy shale	50	0	985	0	
Bench, **Campbell Creek (No. 2 Gas)**	5	0	990	0	55′
Sandy shale and concealed	70	0	1060	0	
Sandstone, massive	18	0	1078	0	
Coal blossom, Matewan	2	0	1080	0	90′
Sandy shale	50	0	1130	0	
Coal, Eagle	2	0	1132	0	52′
Sandy shale and concealed to bench	88	0	1220	0	
Sandy shale and concealed, bench	10	0	1230	0	
Sandstone and concealed	80	0	1310	0	
Coal, Lower War Eagle	4	0	1314	0	182′
Sandstone, shale and concealed	55	0	1369	0	
Coal blossom, Glenalum Tunnel	1	0	1370	0	
Sandstone and concealed	15	0	1385	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Limestone .....2′ Shale, dark, marine fossils .....5 } Dorothy?..	7	0	1392	0	78′
Slate, marine fossils.....	1	0	1393	0	
Shale, dark.....	15	0	1408	0	
Coal, gas, Gilbert?.....	1	0	1409	0	17′
Sandy shale and concealed.....	10	0	1419	0	
Sandstone and concealed to Shumate Creek, 1010′ B.....	141	0	1560	0	

An aneroid section by Teets from the summit of Squealer Knob, descending southward along drain to Jarrell School, 2 miles northwest of Dry Creek P. O., gives the following measurements:

Squealer Knob Section, Marsh Fork District.

Kanawha Group (1405′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy shale and concealed.....	10	0	10	0	
Sandstone, Homewood, massive, medium grained.....	22	0	32	0	
Coal, impure.....1′ 6″ Slate gray.....0 2 Coal, splint, visible.1 8 } Stockton.	3	4	35	4	35′ 4″
Shale, sandy.....	19	8	55	0	
Sandstone, Upper Coalburg, massive..	90	0	145	0	
Sandstone, and sandy shale.....	40	0	185	0	
Concealed, bench, Winifrede Coal horizon	20	0	205	0	169′ 8″
Sandstone, massive.....	130	0	335	0	
Concealed, bench.....	20	0	355	0	
Sandstone, massive, medium grained..	65	0	420	0	
Sandy shale bench.....	15	0	435	0	
Sandy shale and sandstone.....	40	0	475	0	
Sandy shale bench.....	20	0	495	0	
Sandstone, Upper Cedar Grove, massive	80	0	575	0	
Sandy shale and sandstone.....	171	0	746	0	
Coal, Campbell Creek (No. 2 Gas)....	4	0	750	0	545′
Sandstone and concealed.....	141	0	891	0	
Coal, (reported), Eagle.....	4	0	895	0	145′
Sandstone and concealed.....	46	0	941	0	
Coal, Little Eagle, good.....	4	0	945	0	50′
Sandy shale and sandstone.....	70	0	1015	0	
Sandstone, massive.....	40	0	1055	0	
Sandstone and concealed.....	97	0	1152	0	
Coal, (reported), Lower War Eagle...	3	0	1155	0	210′
Concealed and sandy shale.....	60	0	1215	0	
Shale, gray, slaty.....	19	0	1234	0	
Coal, Glenalum Tunnel, gas.....	1	0	1235	0	80′
Slate, dark, visible.....	0	6	1235	6	
Sandstone, Lower Gilbert, and concealed, to bottom, elevation, 1250′ B.	169	6	1405	0	

The foregoing section was taken to the rise, so that the intervals given are not great enough.

Another aneroid section by Teets, from a summit in a western spur on the Coal River Mountain, one mile west of Pond Knob, descending southward to mouth of Sturgeon Fork of Dry Creek, gives the following:

Section 1.2 Miles Northeast of Dry Creek P. O., Marsh Fork District.

	Thickness. Ft.	In.	Total. Ft.	In.	
Kanawha Group (1290′)					
Concealed	86	0	86	0	
Sandstone, **Winifrede**, massive	4	0	90	0	
Coal, weathered....0′ 11″					
Shale, gray.....2 0″					
Coal, block.....2 2 — **Winifrede.**	8	0	98	0	
Shale, dark.....0 5					
Coal, weathered, visible 2 6					
Sandy shale and concealed	42	0	140	0	
Bench, sandy shale	5	0	145	0	
Sandstone and sandy shale	25	0	170	0	
Coal blossom, Coalburg	1	0	171	0	73′
Sandstone and sandy shale	84	0	255	0	
Bench, sandy shale	5	0	260	0	
Sandstone and sandy shale	60	0	320	0	
Coal blossom, Chilton	1	0	321	0	150′
Sandstone and sandy shale	34	0	355	0	
Bench, sandy shale and concealed	5	0	360	0	
Sandstone and sandy shale	70	0	430	0	
Bench, sandy shale	5	0	435	0	
Sandstone, massive	45	0	480	0	
Sandy shale and concealed	50	0	530	0	
Coal blossom, Alma	2	0	532	0	211′
Sandy shale	18	0	550	0	
Sandstone, massive	50	0	600	0	
Shale, gray, slaty, plant fossils	10	0	610	0	
Coal, gas....0′ 2″					
Slate, gray..0 0¼					
Coal, gas....0 5					
Slate, gray..0 0¼ — **Campbell Creek**					
Coal, block..2 7 — **(No. 2 Gas).**	5	8	615	8	83′ 8″
Slate 0 0¼					
Coal, harder.1 0					
Slate, gray..0 8¼					
Coal, gas....0 9					
Slate	1	4	617	0	
Sandy shale and sandstone	53	0	670	0	
Sandstone	30	0	700	0	
Sandy shale	20	0	720	0	
Sandstone and sandy shale	35	0	755	0	
Sandy shale	15	0	770	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate, dark	1	0	771	0	
Slate, dark, marine fossils, Stockton	1	0	772	0	
Coal, gas 0′ 10″					
Coal, columnar 1 10 } Matewan	3	10	775	10	160′ 2″
Coal, gas, visible 1 2					
Sandy shale and sandstone	40	2	816	0	
Shale, gray, iron nodules	2	0	818	0	
Coal, gas 0′ 2 ″					
Slate, gray 0 0½					
Coal, hard 0 9					
Slate, gray 0 2½ } Eagle	3	10	821	10	46′
Coal, gas 0 8					
Coal, gas, columnar 1 6					
Coal, block 0 6					
Sandy shale	8	2	830	0	
Sandstone	40	0	870	0	
Sandstone and sandy shale	60	0	930	0	
Slaty shale	15	0	945	0	
Coal, gas, Cedar	1	0	946	0	124′ 2″
Sandy shale and concealed	114	0	1060	0	
Sandy shale	10	0	1070	0	
Coal blossom, Lower War Eagle	1	0	1071	0	125′
Sandy shale	9	0	1080	0	
Sandstone, massive	20	0	1100	0	
Shaly slate	78	0	1178	0	
Shale, dark, Glenalum Tunnel Coal horizon	2	0	1180	0	109′
Sandstone and concealed	70	0	1250	0	
Sandy shale and concealed	40	0	1290	0	
New River Group (80′)					
Sandstone and concealed, elevation, 1405′ B	80	0	1370	0	

The foregoing section was measured to the rise, so that the Kanawha Group is too small.

TRAP HILL DISTRICT.

Trap Hill District lies south of Clear Fork and Marsh Fork Districts and west of Town District. The entire district lies on the waters of Marsh Fork and has often been called the "Marshes of Coal River," owing to the marshy condition of the soil along its water ways.

An aneroid section by Krebs, descending from a high summit on Guyandot Mountain in the county line between Raleigh and Wyoming Counties, eastward to Breckenridge Creek, 1 mile northwest of Bolt P. O., gives the following:

Section 1 Mile Northwest of Bolt P. O., Trap Hill District.

	Thickness.		Total.		
Kanawha Group (627')	Ft.	In.	Ft.	In.	
Sandy shale and concealed	80	0	80	0	
Sandy shale	5	0	85	0	
Sandstone and concealed	45	0	130	0	
Sandstone	40	0	170	0	
Shale, sandy	4	0	174	0	
Shale, dark, marine fossils, **Stockton**	2	0	176	0	
Coal, Matewan	4	0	180	0	180'
Sandy shale and concealed	35	0	215	0	
Coal, gas 2' 0" / Shale, sandy 5 0 / **Coal** 3 0 — **Eagle**	10	0	225	0	45'
Shale, sandy	1	0	226	0	
Sandstone, **Decota**, massive	39	0	265	0	
Shale, sandy	40	0	305	0	
Shale, dark	10	0	315	0	
Sandstone, **Grapevine**, massive	70	0	385	0	
Shale, sandy, and concealed	20	0	405	0	
Shale, dark	10	0	415	0	
Shale, sandy	30	0	445	0	
Shale, dark	2	0	447	0	
Shale, sandy	45	0	492	0	
Coal 0' 10" / Shale 2 0 / **Coal** 1 5 — **Lower War Eagle**	4	3	496	3	271' 3"
Shale, sandy	2	9	499	0	
Sandstone, massive, **Upper Gilbert**	51	0	550	0	
Shale, sandy	29	0	579	0	
Shale, dark, limy, full of marine fossils	1	0	580	0	83' 9"
Shale, sandy, and concealed	42	0	622	0	
Fire clay	3	0	625	0	
Shale, dark	2	0	627	0	
New River Group (303')					
Sandstone, **Nuttall**, massive, friable	53	0	680	0	
Shale, dark, sandy	28	0	708	0	
Coal, Douglas, gas	2	0	710	0	130'
Shale, sandy, and sandstone	29	0	739	0	
Coal, Lower Douglas, gas	1	0	740	0	
Shale, sandy, and sandstone, friable, reddish, (**Panther**)	140	0	880	0	
Sandstone, soft, reddish	30	0	910	0	
Sandstone, dark, to Breckenridge Creek, elevation, 2040' B	20	0	930	0	

The foregoing section was taken to the rise, so that the intervals given are too small.

Another aneroid section by Teets, descending along the county road westward to company store, and joined to the New River Collieries Company's Diamond Core Test Hole No. 2 (102) at Eccles, gives the following:

Eccles Section, Trap Hill District.

	Thickness. Ft.	In.	Total. Ft.	In.	
Kanawha Group (26′)					
Sandstone and concealed	10	0	10	0	
Sandstone, **Lower Gilbert**, coarse grained, massive, buff colored	15	0	25	0	
Coal blossom	1	0	26	0	26′
New River Group (827′ 2″)					
Sandy shale and sandstone	24	0	50	0	
Sandstone, massive, fine grained	5	0	55	0	
Sandy shale	14	0	69	0	
Coal blossom, Douglas "A"	1	0	70	0	44′
Sandy shale and concealed	60	0	130	0	
Coal blossom, Lower Douglas	1	0	131	0	61′
Shale, sandy	4	0	135	0	
Sandstone, **Panther**, medium grained, buff colored, micaceous	55	0	190	0	
Sandstone, coarse grained, friable, micaceous	10	0	200	0	
Shale, sandy	5	0	205	0	
Sandstone, massive, fine grained	15	0	220	0	
Shale, slaty, gray	5	0	225	0	
Shale, sandy	30	0	255	0	
Shale, slaty	5	0	260	0	
Shale, sandy	10	0	270	0	
Shale, slaty, gray	10	0	280	0	
Sandy shale and concealed	65	0	345	0	
Sandstone, massive	65	0	410	0	
Shale, slaty, to top of boring (102), elevation 2093′ L., thence continuing.	10	0	420	0	
Surface	14	6	434	6	
Sandstone, hard, **Guyandot**	62	0	496	6	
Shale, soft	1	7	498	1	
Shale, dark	14	1	512	2	
Sandstone, shaly	33	2	545	4	
Slate	14	10	560	2	
Coal, Sewell "B," dirty	2	6	562	8	
Fire clay	1	10	564	6	
Sandstone, **Lower Guyandot**	34	6	599	0	
Bone 0′ 4″ **Coal** 1 11½ Slate and **coal** 0 4½ Slate 0 4 **Coal** 0 9 **Coal** and slate 0 9 Slate, black 2 0 **Coal** 4 1 — **Sewell**	10	7	609	7	
Sandstone	9	6	619	1	
Slate, black	0	4	619	5	
Coal	0	3	619	8	
Slate	0	5	620	1	
Fire clay	4	6	624	7	
Slate, black	7	6	632	1	
Shale and slate, dark	18	7	650	8	
Coal, Welch, bony	0	11	651	7	42′
Fire clay	7	6	659	1	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark	14	1	673	2	
Shale, sandy	0	9	673	11	
Fire clay	5	2	679	1	
Sandstone, hard. 12′ 2″ / Shale, dark 4 0 / Sandstone, hard. 4 0 / Shale, dark 11 3 / Sandstone, hard. 10 9 / Sandstone, shale. 5 7 / Sandstone, hard. 33 1 — Upper Raleigh	80	10	759	11	
Slate, black, Little Raleigh Coal horizon	3	6	763	5	102′
Sandstone 66′ 6″ / Slate 0 2 / Sandstone 13 8 — Lower Raleigh	80	4	843	9	
Coal, Beckley	7	10	851	7	
Fire clay	1	7	853	2	

An aneroid section by Krebs, descending from a summit 1.5 miles southwest of Tolley Station, northeastward along road to Tolley Station, and joined to Rock House Fork Coal and Land Company's Diamond Core Test Hole No. 6 (127), gives the following measurements:

Section at Tolley Station, Trap Hill District.

New River Group (637′ 4″)	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	50	0	50	0	
Coal, laeger, and slate	1	0	52	0	51′
Shale, dark	1	0	52	0	
Shale, sandy, and concealed	38	0	90	0	
Shale, dark	2	0	92	0	
Shale, sandy, and concealed	8	0	100	0	
Shale, dark	1	0	101	0	
Shale, sandy, and concealed	4	0	105	0	
Sandstone	30	0	135	0	
Sandy shale	51	0	186	0	
Sandstone, massive, Guyandot, to top of hole	84	0	270	0	
Elevation 1956′ 3″ L.; thence with boring:					
Surface	8	3	278	3	
Shale, dark	7	7	285	10	
Sandstone, Guyandot	38	5	324	3	
Shale, dark	11	4	335	7	
Shale, blue	27	2	362	9	
Slate, black	3	4	366	1	
Coal 1′ 10″ / Shale, blue 14 2 / Coal 0 8 — Sewell Coal	16	9	382	10	331′ 10″
Fire clay	3	2	386	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, shale partings	16	0	402	0	
Shale, blue	1	0	403	0	
Shale, black	0	11	403	11	
Bone, Welch Coal	1	11	405	10	23′
Shale, sandstone partings	21	8	427	6	
Sandstone	4	2	431	8	
Shale, dark	6	7	438	3	
Sandstone, very hard	11	3	449	6	
Shale, blue	2	8	452	2	
Sandstone, very hard	6	0	458	2	
Sandstone, shale partings	10	10	469	0	
Shale, sandstone partings	89	1	558	1	
Slate, black	2	5	560	6	
Coal, Little Raleigh	0	3	560	9	154′ 1″
Shale, sandstone partings	3	2	563	11	
Sandstone, **Lower Raleigh**	62	8	626	7	
Slate, black	0	11	627	6	
Coal 4′ 4″ Bone 1 1 **Coal** 2 3 Bone 0 11 — **Beckley**	8	7	636	1	75′ 4″
Fire clay	1	3	637	4	

TOWN DISTRICT.

Town District lies east of Clear Fork and Trap Hill Districts, and south of Fayette County, and west of Shady Spring District, and extends in a north and south direction through the central part of Raleigh County for a distance of 15 miles. Several interesting sections were taken within its borders, and they will now be given.

The following hand level section was made by Krebs, descending from a high summit, on the dividing ridge between the waters of Clear Fork and Paint Creek, a corner to Raleigh and Fayette Counties, northwestward to Paint Creek, and combined with Core Drill Hole, E. J. Berwind No. 23 (197):

Section at Herberton, Fayetteville District, Fayette County.

	Thickness. Ft.	In.	Total. Ft.	In.	
Kanawha Group (985′)					
Sandstone, conglomerate	50	0	50	0	
Sandy shale and bench	10	0	60	0	
Sandstone	150	0	210	0	
Coal, Cedar Grove	6	6	216	6	216′ 6″
Shale, sandy, and concealed	70	6	287	0	
Coal, Alma	6	0	293	0	76′ 6″
Sandy shale and concealed	20	0	313	0	
Coal, Little Alma	3	0	316	0	23′ 0″
Sandy shale and concealed	30	0	346	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, Campbell Creek (No. 2 Gas)	5	0	351	0	35′ 0″
Sandstone, **Brownstown,** massive	59	0	410	0	
Shale, sandy	11	0	421	0	
Coal, Powellton	2	0	423	0	72′ 0″
Sandy shale	17	0	440	0	
Sandstone, **Eagle,** massive, coarse grained	90	0	530	0	
Shale, dark	4	0	534	0	
Coal, Eagle	4	0	538	0	115′ 0″
Shale, sandy, and concealed	54	0	592	0	
Sandstone, laminated, dark	81	0	673	0	
Shale, dark	13	0	686	0	
Shale, sandy	1	0	687	0	
Limestone, dark, marine fossils, Eagle	1	0	688	0	150′ 0″
Shale, dark	19	0	707	0	
Fire clay, soft, dark gray	3	0	710	0	
Shale, sandy	30	0	740	0	
Coal, Little Cedar	1	3	741	3	53′ 3″
Fire clay	2	9	744	0	
Shale, sandy	38	0	782	0	
Shale, dark, partings	0	3	782	3	
Coal, and slate, **Lower War Eagle**	1	9	784	0	42′ 9″
Fire clay	1	0	785	0	
Sandstone, **Upper Gilbert**	46	0	831	0	
Shale, sandy	14	0	845	0	
Coal, Glenalum Tunnel	0	8	845	8	61′ 8″
Fire clay	2	4	848	0	
Shale, dark buff	90	0	938	0	
Shale, sandy, light	20	10	958	10	
Coal, Gilbert "A"	0	2	959	0	113′ 4″
Fire clay	3	0	962	0	
Shale, sandy	21	0	983	0	
Coal and slate, **Gilbert**	1	0	984	0	25′ 0″
Fire clay	1	0	985	0	
New River Group (727′ 2″)					
Sandstone, massive, fine grained	14	0	999	0	
Shale, sandy, and concealed	63	0	1062	0	
Coal, Douglas	4	0	1066	0	82′ 0″
Fire clay	1	0	1067	0	
Sandy shale and concealed to top of Core Test Hole No. 23 (197), elevation, 1676′ L	276	0	1343	0	
Thence with boring:					
Surface	13	0	1356	0	
Sandstone	42	0	1398	0	
Slate	17	0	1415	0	
Sandstone, **Lower Iaeger**	32	0	1447	0	
Shale, dark	3	0	1450	0	
Sandstone	2	0	1452	0	
Shale, dark	46	0	1498	0	
Sandstone, very hard, **Guyandot**	78	0	1576	0	
Shale	22	0	1598	0	
Coal, bony, Sewell "B"	0	6	1598	6	532′ 6″
Shale	15	6	1614	0	
Sandstone	17	0	1631	0	
Shale	9	0	1640	0	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal, Sewell "A"		0	3	1640	3	41′ 9″
Fire clay		1	6	1641	9	
Sandstone		3	3	1645	0	
Shale, sandstone partings		40	0	1685	0	
Shale, dark		19	0	1704	0	
Bone and streaked coal ....1′ 0″						
Coal, bony....0 1½						
Coal 1 1	Sewell	4	10½	1798	10½	68′ 7½″
Coal, bony....0 7						
Coal 0 8						
Coal (core lost)....1 5						
Fire clay to bottom		3	4½	1712	3	

An aneroid section by Teets, descending southward from a summit to Sweeneyburg, and connected to E. J. Berwind Diamond Core Test Hole B-24 (34), gives the following:

Sweeneyburg Section, Town District.

New River Group (482′ 6″)		Thickness. Ft.	In.	Total. Ft.	In.	
Concealed		40	0	40	0	
Sandstone, Panther, massive, coarse grained, friable		60	0	100	0	
Shale, sandy, ferriferous		30	0	130	0	
Shale, dark, slaty		20	0	150	0	
Coal, laeger, good, blocky		2	0	152	0	152′
Sandstone, massive		18	0	170	0	
Fire clay		2	0	172	0	
Shale, sandy, and concealed to top of Hole (34), elevation, 1826.4′ L....		33	0	205	0	
Thence with boring:						
Surface		25	0	230	0	
Shale		11	0	241	0	
Sandstone, very hard		48	0	289	0	
Shale and sandstone partings		23	0	312	0	
Shale, dark		89	0	401	0	
Sandstone		4	0	405	0	
Shale, dark		24	0	429	0	
Sandstone		11	0	440	0	
Slate, black		12	0	452	0	
Coal ....0′ 6″						
Slate, black....0 4						
Coal 0 4						
Bone and coal....1 5						
Coal 2 0						
Bone and coal....0 11½						
Fire clay....0 1	Sewell.	18	5	470	5	318′ 5″
Bone and coal....3 6						
Coal 2 0						
Bone and coal....5 10½						
Slate, black....0 3						
Sandstone 0 1						
Coal, bony....0 3						
Coal 0 10						

	Thickness. Ft.	In.	Total. Ft.	In.
Slate, black	0	6	470	11
Sandstone	0	7	471	6
Slate and sandstone partings	11	0	482	6

The Sewell Coal at the base of this section is badly interlaminated with impurities.

A section by Teets from the Stonewall Coal and Coke Company's mine just south of Terry, eastward along plane to the C. & O. Ry., just south of Terry, gives the following:

Terry Section, Town District.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River and Pocahontas Groups (467')					
Concealed	50	0	50	0	
Slate and shale	9	0	59	0	
Coal 4' 2" / Slate, dark 4 0 / **Coal** 1 0 — **Fire Creek**	9	2	68	2	68' 2"
Slate, iron nodules	1	10	70	0	
Sandstone, massive	50	0	120	0	
Shale, sandy, and sandstone	70	0	190	0	
Sandstone, massive, medium grained	90	0	280	0	
Concealed	60	0	340	0	
Sandstone and concealed	35	0	375	0	
Shale, slaty	20	0	395	0	
Sandstone, massive, coarse grained	70	0	465	0	
Sandy shale	2	0	467	0	
Mauch Chunk Series (398')					
Shale	3	0	470	0	
Shale, gray	5	0	475	0	
Shale, red	5	0	480	0	
Shale, gray	10	0	490	0	
Shale, red	2	0	492	0	
Shale, gray	3	0	495	0	
Shale, red	15	0	510	0	
Sandstone, massive, fine grained	20	0	530	0	
Shale, green and red	30	0	560	0	
Sandstone, massive	20	0	580	0	
Concealed, bench	5	0	585	0	
Sandstone and concealed	7	0	592	0	
Shale, slaty, impure coal streaks	3	0	595	0	526' 10"
Shale, sandy	25	0	620	0	
Concealed, bench	20	0	640	0	
Shale, sandy, and concealed	50	0	690	0	
Sandstone and concealed	50	0	740	0	
Shale, sandy	50	0	790	0	
Sandstone, massive, medium grained	10	0	800	0	
Sandstone, full of pebbles, brown specks	0	6	800	6	
Shale, gray	12	6	813	0	
Limestone, gray, marine fossils, Terry	1	0	814	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, gray	2	0	816	0	
Coal, impure	0	3	816	3	221′ 3″
Shale, gray, slaty	0	9	817	0	
Sandstone	8	0	825	0	
Shale, greenish red	5	0	830	0	
Sandstone, gray	10	0	840	0	
Concealed to bottom, elevation, 1760′ B.	25	0	865	0	

The foregoing section was obtained near the northeastern boundary of Raleigh County.

SHADY SPRING DISTRICT.

Shady Spring District lies east of Town and Slab Fork Districts and extends from New River south to Flattop Mountain, on the south, in which some important sections have been measured.

The following section, published by I. C. White, in Volume II(A) of the State Survey Reports, pages 21-23, was obtained by combining the log of Coal Test Boring 165 on Map II, located 1.5 miles southward from Royal, with measurements down the south hillside of New River at Royal:

Grandview Section, Shady Spring District.

New River and Pocahontas Groups (736′ 7″)	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	10	5	10	5	
Sandstone, Lower Raleigh	58	3	68	8	68′ 8″
Sandstone, hard	27	5	96	1	
Slate and rock	0	9	96	10	
Sandstone	2	2	99	0	
Slate	2	6	101	6	
Coal 1′ 0¼″ / Slate and coal 0 2¾ / "Lost" 0 0¾ — Beckley	1	3¾	102	9¾	34′ 1¾″
Slate	0	3½	103	1¼	
Sandstone	11	3¾	114	5	
Sandstone, slaty	24	1	138	6	
Slate	0	6	139	0	
Sandstone	21	0	160	0	
Sandy slate	3	1	163	1	
Slate	11	0	174	1	
Sandstone	0	9	174	10	
Slate	3	6	178	4	
Sandstone	13	6	191	10	
Sandy slate	21	2	213	0	
Slate	12	8½	225	8½	

	Thickness. Ft.	In.	Total. Ft.	In.	
"Lost" (Coal).....1′ 1″ } Fire Creek Coal .....2 0 }	3	1	228	9½	125′ 11¾″
Slate	0	6	229	3½	
Fire clay	5	1	234	4½	
Sandstone	13	5	247	9½	
Sandy slate	2	5	250	2½	
Slate	1	3	251	5½	
Coal, Little Fire Creek	0	6	251	11½	23′ 2″
Slate	3	6	255	5½	
Sandstone and sandy slate	10	3	265	8½	
Slate	17	6	283	2½	
Sandstone	23	2½	306	5	
Sandy slate	2	3	308	8	
Coal .....0′ 7″ } No. 9 "Lost" (Coal)..0 5 } Pocahontas...	1	0	309	8	57′ 8½″
Fire clay	3	6	313	2	
Sandy shale	54	2	367	4	
Sandstone, Pierpont	36	0	403	4	
Sandy shale	11	6	414	10	
Sandstone, Eckman	51	0	465	10	
Coal, Pocahontas No. 4	1	8	467	6	157′ 10″
Fire clay	2	8	470	2	
Shale, gray, sandy	3	1	473	3	
Sandstone, Upper Pocahontas	39	0	512	3	
Coal .....0′ 6″ | Bony coal.....0 5 | Fire clay.....0 10 | Bony coal.....0 2 | Coal .....1 5 | No. 3 Fire clay.....2 10 } Pocahontas...	12	0	524	3	56′ 9″
Sandstone, gray .....3 7 | Slate, black...1 0 | Coal .....1 3 }					
Sandstone to bottom of boring, (continued from surface exposures)	6	4	530	7	
Sandstone, massive	50	0	580	7	
Concealed	20	0	600	7	
Shales, gray	10	0	610	7	
Shale, bituminous, dark	1	0	611	7	
Shale, gray	5	0	616	7	
Concealed	22	0	638	7	
Shale, gray	5	0	643	7	
Greenish gray sandy beds and yellowish shale	23	0	666	7	
Concealed, with massive greenish gray sandstone to base of Pottsville	70	0	736	7	
Mississippian (427′)					
Mauch Chunk red shale, green sandstone, and concealed	220	0	956	7	
Great massive cliff of pebbly sandstone, reddish gray	50	0	1006	7	
Red beds and concealed	50	0	1056	7	
Sandstone, coarse, massive	20	0	1076	7	
Red shale, with limy beds near center	30	0	1106	7	
Sandstone, fine grained	5	0	1111	7	

	Thickness. Ft.	In.	Total. Ft.	In.
Shale and sandstone to level of track at mouth of Stretcher Neck Tunnel	12	0	1123	7
Concealed to level of New River, elevation, 1255.4′ B.	40	0	1163	7

An aneroid section by Teets in the northeastern corner of Shady Spring District, descending from a high point northeastward along county road to mouth of Glade Creek, 0.5 mile west of Glade Station, gives the following succession:

Section 0.5 Mile West of Glade, Shady Spring District.

	Thickness. Feet.	Total. Feet.	
New River and Pocahontas Groups (610′)			
Sandstone	40	40	
Sandy shale and concealed	68	108	
Coal, Beckley, prospect opening	2	110	
Concealed and sandy shale	104	214	
Slate	2	216	
Coal, Fire Creek	4	220	220′
Sandstone and concealed	170	390	
Shale, sandy, dark	15	405	
Sandstone, massive, cliff	82	487	
Coal 1′ 0″			
Slate, gray 1 0 } **Pocahontas No. 3**	3	490	270′
Coal 1 0			
Slate	2	492	
Sandstone, massive	68	560	
Concealed	12	572	
Slate	1.5	573.5	
Coal, Pocahontas No. 1	1.5	575	85
Slate, (visible)	2	577	
Concealed	13	590	
Sandstone	20	610	
Mississippian (898′)			
Concealed	35	645	
Shale, sandy	5	650	
Sandstone, green	30	680	
Concealed	10	690	
Sandstone	10	700	
Sandy shale	15	715	
Concealed	35	750	
Sandstone	30	780	
Shale, sandy	20	800	
Shale, reddish tint	10	810	
Sandstone, massive	40	850	
Shale, sandy, and concealed	25	875	
Sandstone, massive	45	920	
Shale, sandy, and concealed	40	960	
Sandstone and sandy shale, mostly sandstone	80	1040	
Concealed	70	1110	
Shale, gray, sandy	10	1120	
Sandstone	10	1130	

PLATE IV.—View of Slab Fork village, showing New River Group.

	Thickness. Feet.	Total. Feet.
Shale, gray	10	1140
Sandstone, massive, fine grained	30	1170
Shale, reddish tint	10	1180
Sandstone, massive, fine grained	20	1200
Shale, sandy	10	1210
Sandstone, massive	35	1245
Shale, limy, gray	12	1257
Limestone, gray, hard, marine fossils	3	1260
Concealed	40	1300
Shale, red	10	1310
Shale, red and sandy	7	1317
Shale, red, limy	7	1324
Limestone	1	1325
Shale, red	5	1330
Concealed and red shale	35	1365
Shale, red	15	1380
Concealed and sandy shale	90	1470
Sandstone, limy	15	1485
Shale, red	9	1494
Shale, greenish red	1	1495
Shale, red	5	1500
Limestone, impure, red	2	1502
Shale, red, to creek, elevation, 1232′ L	6	1508

This section was taken to the rise, so that the interval between the Fire Creek Coal and the top of the Mauch Chunk Shale is too small.

Another section by Krebs, descending southwestward from a summit along road leading from the northeast to Beaver Creek at Beaver P. O., gives the following:

Section at Beaver P. O., Shady Spring District.

New River and Pocahontas Groups (455′)		Thickness. Feet.	Total. Feet.	
Sandstone and concealed		50	50	
Sandstone, Raleigh, friable		120	170	
Coal, Beckley		5	175	175′
Shale, sandy		50	225	
Sandstone, buff, friable		30	255	
Shale, dark, full of iron ore		9	264	
Shale, dark		1	265	
Shale, sandy		50	315	
Coal blossom 1′ Shale, dark 8 **Coal blossom** 1	Fire Creek	10	325	150′
Shale, sandy		15	340	
Sandstone, shelly		15	355	
Sandstone, massive		20	375	
Shale, dark, brownish		55	430	
Shale, dark		10	440	
Sandstone and concealed to Beaver Creek, elevation, 2147′ L		15	455	

RICHMOND DISTRICT.

Richmond District lies on the eastern part of Raleigh County, and is bounded on the west by Shady Spring District, on the north and east by New River, and on the south by Summers County. The following detailed sections illustrate the rock succession therein.

An aneroid section obtained by Teets in the western portion of Richmond District, by descending southeastward along county road, from Sullivan Knob to New River, just below Sandstone Falls, gives the following:

Sandstone Falls Section, Richmond District.

Mauch Chunk Series (1355')	Thickness. Feet.	Total. Feet.
Shale, red, sandy, concealed	115	115
Shale, red, limy	20	135
Shale, dark red	17	152
Shale, gray, almost fire clay	3	155
Shale, red	20	175
Shale, sandy	19	194
Coal blossom, Pluto	1	195
Shale, yellow, limy	5	200
Shale, sandy	5	205
Red shale, bench	10	215
Shale, sandy, and sandstone	50	265
Sandy shale bench	15	280
Shale, light red	5	285
Shale, sandy	43	328
Shale, reddish	2	330
Shale, sandy	45	375
Shale, red	10	385
Shale, sandy	20	405
Sandstone, fine grained	20	425
Shale, reddish and sandy	65	490
Shale, red	5	495
Shale, sandy, bench	20	515
Shale, red	10	525
Shale, sandy	43	568
Shale, red	4	572
Shale, yellow	3	575
Shale, red	5	580
Sandstone, massive, fine grained	5	585
Shale, sandy	10	595
Shale, red and sandy	25	620
Shale, sandy	10	630
Sandstone, fine grained	20	650
Shale, sandy	25	675
Shale, light red	10	685
Shale, sandy	10	695
Sandstone, massive, gray, fine grained	15	710

	Thickness. Feet.	Total. Feet.
Shale, gray	5	715
Shale, red	25	740
Limestone, massive, **Hinton**, cliff full of marine fossils near top	35	775
Shale, red	20	795
Shale, sandy	20	815
Shale, dark red, bench	30	845
Shale, red, light	35	880
Concealed, bench	10	890
Shale, red and sandy	70	960
Shale, red	15	975
Sandstone, reddish, limy	15	990
Shale, red	10	1000
Sandstone, reddish, limy	15	1015
Shale, red	10	1025
Shale, yellow	7	1032
Sandstone, fine grained	3	1035
Shale, red, green streaks	17	1052
Limestone, impure	3	1055
Shale, red	15	1070
Sandstone	5	1075
Shale, red	5	1080
Sandstone, massive, gray	5	1085
Shale, red	5	1090
Sandstone	15	1105
Shale, red	18	1123
Shale, yellow	2	1125
Shale, red	7	1132
Shale, green	3	1135
Shale, red and sandy	40	1175
Sandstone and shale	30	1205
Sandstone, limy, reddish	10	1215
Shale, sandy	30	1245
Sandstone	30	1275
Shale, sandy	10	1285
Sandstone, ferriferous, massive, gnarly, limy, to New River, water level, elevation, 1290′ B	70	1355

The above section begins about 150 feet under the base of the Pottsville Series, and reveals the character of the upper portion of the Mississippian in eastern Raleigh County.

An aneroid section by Krebs, descending from Freezeland Mountain along road leading to New River at Hinton, reveals the following succession:

Section at Hinton, Richmond District.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (340′)		
Sandstone, friable	60	60
Coal, soft, Pocahontas No. 6	3	63
Sandstone and concealed	217	280

	Thickness. Feet.	Total. Feet.
Coal blossom, Pocahontas No. 2	1	281
Sandstone and concealed	39	320
Coal blossom, Pocahontas No. 1	1	321
Sandy shale	19	340
Mauch Chunk Series (1650′)		
Limestone	1	341
Shale, sandy, reddish tinge	84	425
Sandstone, greenish	15	440
Shale, sandy	20	460
Shale, red	5	465
Sandstone, fine grained, greenish	60	525
Sandy shale and sandstone	70	595
Shale, red	10	605
Sandstone and sandy shale	100	705
Sandstone, green, hard	25	730
Sandstone, buff	75	805
Red and sandy shale	120	925
Sandstone, green	30	955
Shale, sandy	20	975
Shale, red	10	985
Shale, green	10	995
Sandy shale and sandstone	85	1080
Sandstone, limy	40	1120
Sandy shale, yellowish	30	1150
Shale, red	10	1160
Shale, green, limy	30	1190
Shale, sandy	20	1210
Shale, yellowish	10	1220
Shale, red	30	1250
Shale, green	25	1275
Sandstone, fine grained	5	1280
Shale, sandy and reddish	65	1345
Sandstone, green, limy	5	1350
Sandstone, buff	10	1360
Shale, red	10	1370
Sandstone, brownish	10	1380
Shale, sandy	20	1400
Limestone, Hinton, upper portion full of marine fossils	35	1435
Shale, green, and yellow	45	1480
Shale, red	10	1490
Shale, yellow	10	1500
Shale, red	55	1555
Sandstone, brown, limy	5	1560
Shale, green	30	1590
Shale, red	75	1665
Shale, yellow	5	1670
Shale, red	30	1700
Sandstone, brown	20	1720
Shale, variegated	35	1755
Sandstone, brown	5	1760
Shale, red	15	1775
Sandstone, green	15	1790
Shale, red	10	1800
Sandstone, brown	10	1810
Shale, red	25	1835

	Thickness. Feet.	Total. Feet.
Sandstone, brown	10	1845
Lime, greenish gray	5	1850
Sandstone, **Hinton**, dark brown	90	1940
Shale, green, limy	10	1950
Sandstone	25	1975
Sandstone, brown, to New River, elevation, 1360′ B	15	1990

The above section was taken to the rise, so that the intervals as given are slightly too short, owing to the rapid rise of the strata.

The following aneroid section was measured by Krebs, descending easterly along road to Pinch Creek, ½ mile south of Pluto:

Section ½ Mile South of Pluto P. O., Richmond District.

	Thickness. Feet.	Total. Feet.	
New River and Pocahontas Groups (460′)			
Sandstone and concealed	70	70	
Shale, sandy	10	80	
Sandstone, massive, greenish	135	215	
Shale, dark	9	224	
Shale, sandy	6	230	
Coal, Pocahontas No. 6, soft	1	231	
Sandstone and concealed	114	345	
Coal, Pocahontas No. 3, soft	1	346	115′
Shale, dark	4	350	
Sandstone, buff	20	370	
Shale, sandy	30	400	
Coal, Pocahontas No. 2	1	401	55′
Shale, sandy, to base of Pottsville	59	460	
Mauch Chunk Series (90′)			
Sandstone, fine grained	30	490	
Red and sandy shale, elevation, 2530′ B	60	550	

SLAB FORK DISTRICT.

Slab Fork District lies south and west of Trap Hill, Town, and Shady Spring Districts, and occupies the southwestern portion of Raleigh County, and in it some sections were measured.

The following aneroid section, obtained by Krebs, descending from a summit northwestward to Jenny Gap, combined with J. W. Moore et al. Diamond Core Test No. 3 (136) at Jenny Gap, gives the following:

Section at Jenny Gap, Slab Fork District.

New River Group (995′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone and concealed	85	0	85	0	
Shale, sandy	120	0	205	0	
Sandstone	35	0	240	0	
Shale, sandy	40	0	280	0	
Fire clay, dark	2	0	282	0	
Sandy shale and concealed	58	0	340	0	
Sandstone	40	0	380	0	
Sandy shale	75	0	455	0	
Shale, dark, to top of Core Test Hole (136)	5	0	460	0	
Thence with boring, elevation, 2127.3′ B.:					
Yellow clay	5	0	465	0	
Slate, dark	7	0	472	0	
Sandstone	15	0	487	0	
Slate, dark	23	0	510	0	
Slate, sandy	29	0	539	0	
Slate, gray	11	0	550	0	
Sandstone	4	0	554	0	
Slate, dark	5	4	559	4	
Coal, Sewell	1	3	560	7	560′ 7″
Slate, dark	2	5	563	0	
Slate, sandy	7	0	570	0	
Sandstone	28	0	598	0	
Sandstone and slate, mixed	16	8	614	8	
Coal, Welch	0	7	615	3	54′ 8″
Fire clay	3	9	619	0	
Slate, dark	20	0	639	0	
Sandstone with slate mixed 50′					
Sandstone, blue 16					
Slate, dark 4 — **Raleigh**	108	0	747	0	
Sandstone, blue 16					
Sandstone, conglomerate 9					
Sandstone, hard 13					
Slate, dark	30	0	777	0	
Slate and sandstone mixed	6	11	783	11	
Coal, Beckley	0	1	784	0	168′ 9″
Slate, gray	2	0	786	0	
Slate, dark	18	0	804	0	
Slate, gray	17	0	821	0	
Sandstone, **Quinnimont**, gray	73	0	894	0	
Slate, dark	7	0	901	0	
Slate, blue	9	6	910	6	
Coal 1′ 0″					
Slate 1 3 — **Fire Creek**	3	11	914	5	130′ 5″
Coal 1 8					
Slate, dark	0	7	915	0	
Slate, blue	34	0	949	0	
Coal, slaty, **Little Fire Creek**	1	4	950	4	35′ 11″
Slate, blue	17	4	967	8	
Coal, Pocahontas No. 9, slaty	0	4	968	0	17′ 8″
Slate, blue	2	0	970	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate, gray	12	0	982	0	
Slate, dark	10	0	992	0	
Coal, Pocahontas, No. 8	1	0	993	0	25′ 0″
Fire clay	2	0	995	0	
Pocahontas Group (243′)					
Sandstone, **Flattop Mountain**	32	0	1027	0	
Slate, dark	24	0	1051	0	
Slate, blue, sandy	13	0	1064	0	
Slate, blue	9	4	1073	4	
Coal, Pocahontas No. 7	0	6	1073	10	80′ 10″
Fire clay	0	2	1074	0	
Shale, gray, sandy	17	0	1091	0	
Sandstone	10	0	1101	0	
Slate, dark gray, with hard bands	10	0	1111	0	
Slate, dark	15	3	1126	3	
Coal, Pocahontas No. 6	1	2	1127	5	53′ 7″
Fire clay	1	7	1129	0	
Slate, dark	17	5	1146	5	
Slate, black	3	0	1149	5	
Coal, Pocahontas No. 4	1	6	1150	11	23′ 6″
Sandstone	48	7	1199	6	
Sandstone, conglomerate	1	5	1200	11	
Slate, dark	10	1	1211	0	
Sandstone	16	7	1227	7	
Slate, dark	0	11	1228	6	
Coal, Pocahontas No. 3 "Rider"	0	9	1229	3	
Slate, dark, sandy	3	10	1233	1	
Coal, Pocahontas No. 3	3	7	1236	8	
Slate, dark	0	2	1236	10	
Slate, sandy, to bottom	1	2	1238	0	

The foregoing interesting section begins in the basal portion of the Kanawha, and passing through all of the New River beds, ends in the Pocahontas Group below Pocahontas No. 3 Coal, and is very important in that it shows the Pocahontas No. 3 Coal to have commercial thickness at this locality.

An aneroid section by Krebs, descending along road from a summit on Big Ridge, southward to Winding Gulf at Tams, gives the following:

Section at Tams (Gulf P. O.), Slab Fork District.

	Thickness. Feet.	Total. Feet.
New River and Pocahontas Groups (870′)		
Sandstone and concealed	90	90
Shale, sandy	50	140
Shale, sandy, brownish	18	158
Shale, dark	2	160
Shale, sandy, and concealed	100	260
Sandstone, **Guyandot**, massive	65	325

	Thickness. Feet.	Total. Feet.	
Shale, sandy, **Sewell Coal horizon**	5	330	330′
Sandstone, grayish	83	413	
Fire clay, dark	2	415	
Sandstone and concealed	110	525	
Coal, Beckley	5	530	200′
Sandstone and concealed	38	568	
Coal, Fire Creek	2	570	40′
Sandstone and concealed	75	645	
Coal blossom, Little Fire Creek	1	646	76′
Sandy shale and concealed	79	725	
Sandstone and concealed	78	803	
Coal blossom, Pocahontas No. 7	2	805	159′
Shale, sandy, and concealed	55	860	
Sandstone to creek, elevation, 1730′ L	10	870	

The Beckley Coal is mined at Tams by the Gulf Smokeless Coal Company.

An aneroid section by Teets in the southern part of Slab Fork District, descending northward along county road from a point on a ridge between Beetree Branch of Devils Fork and Devils Fork to the latter, 1.7 miles northeast of Basin P. O., gives the following:

Section 1.7 Miles Northeast of Basin P. O., Slab Fork District.

	Thickness. Feet.	Total. Feet.	
New River Group (510′)			
Shale, sandy and concealed	15	15	
Sandstone, **Welch**, massive	45	60	
Shale, sandy, and concealed	13	73	
Fire clay, **Welch Coal horizon**	2	75	75′
Shale, sandy	10	85	
Sandstone, **Upper Raleigh**, massive, coarse grained, friable	40	125	
Shale, sandy, and sandstone	40	165	
Sandstone, **Lower Raleigh**, massive, medium grained, buff colored	106	271	
Coal blossom, Beckley	4	275	200′
Shale, sandy, and sandstone	60	335	
Slate, black	1	336	
Shale, sandy	17	353	
Fire clay, **Fire Creek Coal horizon**	2	355	80′
Shale, sandy	5	360	
Sandstone, massive, medium grained, gray buff colored	37	397	
Shale, sandy, and sandstone	111	508	
Fire clay, **Pocahontas No. 8 Coal horizon**	2	510	155′
Pocahontas Group (320′)			
Shale, sandy	10	520	
Sandstone, massive	15	535	
Shale, sandy, and concealed	35	570	

	Thickness. Feet.	Total. Feet.	
Sandstone	8	578	
Coal blossom, Pocahontas No. 7	2	580	70′
Shale, sandy, and concealed	25	605	
Sandstone	5	610	
Shale, gray	8-4″	618-4″	
Coal, Pocahontas No. 6, impure	1-8″	620	40′
Slate	2	622	
Sandstone, **Eckman**	30	652	
Shale, slaty	2-6″	654-6″	
Coal, No. 4 Pocahontas	0-6″	655	35′
Fire clay, slaty	2	657	
Sandstone, **Upper Pocahontas,** massive	63	720	
Shale, sandy, and concealed	30	750	
Sandstone	11-5″	761-5″	
Coal 0′ 8″			
Bone 0 7 **Pocahontas No. 3**	3-7″	765	110′
Coal 2 4			
Slate	2	767	
Sandstone and concealed to Devils Fork	63	830	

The foregoing section was taken to the dip, so that the intervals between the strata are slightly too great.

MERCER COUNTY SECTIONS.

JUMPING BRANCH DISTRICT.

Jumping Branch District occupies the northern part of Mercer County, and is bounded on the north by Raleigh and Summers Counties, on the east by Summers, and on the south by Plymouth and Rock Districts. Some detailed sections here given show the general succession in this District.

An aneroid section by Krebs, descending southward from Indian Grave Mountain to Mill Branch, 1.5 miles northeast from Barn P. O., reads as follows:

Section 1.5 Miles Northeast of Barn, Jumping Branch District.

New River and Pocahontas Groups (800′)	Thickness. Feet.	Total. Feet.	
Sandstone and concealed	50	50	
Coal, Sewell?	3	53	53′
Sandstone and concealed	37	90	
Coal blossom, Welch?	3	93	40′
Sandstone and concealed	77	170	
Bench	3	173	80′
Sandstone and concealed	140	313	

	Thickness. Feet.	Total. Feet.	
Bench, concealed	2	315	142′
Sandstone and concealed	75	390	
Coal, No. 9 Pocahontas?	2	392	77′
Sandstone and concealed	280	672	
Coal, Pocahontas No. 3	3	675	283′
Sandstone and concealed, elevation, 2405′ B.	125	800	

The above section was taken to the rise, so the intervals between the coals are too small. The interval shown between the Sewell and Pocahontas No. 3 is 622 feet in this section; but if correction be made for the rise, this interval will be about 700 feet.

Another aneroid section was obtained by Krebs, descending from Clark School southwesterly to Camp Creek, 2 miles northwest of Camp Creek P. O., as follows:

Section 2 Miles Northwest of Camp Creek P. O., Jumping Branch District.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (440′)		
Sandstone and concealed	70	70
Shale, sandy	5	75
Sandstone and concealed	77	152
Coal, Pocahontas No. 2	3	155
Sandstone and concealed	155	310
Shale	130	440
Mauch Chunk Series (260′)		
Shale, red	5	445
Sandstone and concealed	40	485
Shale, red	10	495
Shale, red, sandy, and concealed, to creek, elevation, 2180′ B	205	700

ROCK DISTRICT.

Rock District lies south of Jumping Branch District and east of McDowell County, and is bounded on the west and north by Flattop Mountain. In it the following aneroid section was measured by Krebs, descending from Bluff Mountain, southeastward along road to a point 4 miles northeast of Springton P. O.:

Section 4 Miles Northeast of Springton P. O., Rock District.

New River and Pocahontas Groups (770′)	Thickness. Feet.	Total. Feet.	
Shale, sandy, and sandstone	55	55	
Coal blossom, Welch	1	56	56′
Shale, sandy	44	100	
Sandstone, massive	60	160	
Shale, sandy, and concealed	100	260	
Coal, Fire Creek	2	262	206′
Sandstone and concealed	39	301	
Shale, sandy, and sandstone	79	380	
Coal, No. 9 Pocahontas	3	383	121′
Shale, sandy	2	385	
Sandstone, massive, **Flattop and Pierpont**	110	495	
Shale, sandy	9	504	
Coal, Pocahontas No. 6	1	505	122′
Sandstone and concealed	39	544	
Coal, Pocahontas No. 5	1	545	40′
Sandstone and concealed	45	590	
Coal blossom, Pocahontas No. 4	1	591	46′
Sandstone, brown, fine grained	60	651	
Sandstone, gray	14	665	
Shale, gray	11	676	
Coal, Pocahontas No. 3	4	680	89′
Shale, sandy	5	685	
Sandstone	47	732	
Coal, Pocahontas No. 2	3	735	55′
Shale, sandy, and concealed, elevation, 2710′ B	35	770	

The foregoing section was taken to the rise, so that the intervals between the different coals are too small.

The following aneroid section was obtained by Teets in the northeastern portion of Mercer County, descending northward along the county road dividing Wyoming and Raleigh Counties to Clarks Gap Station:

Clarks Gap Section, Rock District, Mercer County.

New River Group (222′)	Thickness. Feet.	Total. Feet.	
Concealed in slope	30	30	
Shale, sandy, and concealed	29	59	
Coal blossom, Fire Creek	1	60	60′
Fire clay	1	61	
Shale, sandy	17	78	
Coal blossom, Little Fire Creek	2	80	20′
Shale, sandy	35	115	
Sandstone, massive, coarse grained, gray, friable	70	185	
Shale, sandy	14	199	

	Thickness. Feet.	Total. Feet.	
Coal blossom.....1′			
Shale, sandy.....4 } Pocahontas No. 9..	6	205	125′
Coal 1			
Fire clay.....	2	207	
Shale, sandy.....	3	210	
Sandstone	5	215	
Shale, sandy.....	4	219	
Coal blossom, Pocahontas No. 8.....	1	220	15′
Fire clay.....	2	222	
Pocahontas Group (238′)			
Shale, sandy.....	3	225	
Shale, sandy, and sandstone.....	8	233	
Coal blossom, Pocahontas No. 7.....	2	235	15′
Shale, sandy, to low gap.....	35	270	
Shale, sandy, and sandstone.....	60	330	
Sandstone	20	350	
Shale and concealed.....	90	440	
Sandstone	8	448	
Shale, gray.....	2	450	
Coal .....1′ 4″			
Slate .....0 11 } Pocahontas No. 3	5-2″	455-2″	220′ 2″
Coal 2 11			
Shale, gray, to railroad track near northeastern portal of Clarks Gap Tunnel, elevation, 2525′ B.....	4-10″	460	

The following aneroid section was obtained by Teets, in the extreme southwestern corner of Mercer County and northern part of Tazewell County, Virginia, descending southeastward along the approximate Virginia and West Virginia State Line and county road to Pocahontas, Virginia:

Pocahontas Section, Mercer County, West Virginia and Tazewell County, Virginia.

	Thickness. Feet.	Total. Feet.	
New River Group (135′)			
Shale, sandy, and concealed.....	9	9	
Coal blossom, Little Fire Creek.....	1	10	10′
Shale, slaty and sandy.....	10	20	
Sandstone, Pineville, massive.....	20	40	
Shale, sandy, sandstone, and concealed.....	78	118	
Coal blossom, Pocahontas No. 9.....	2	120	110′
Shale, sandy, and concealed.....	13.5	133.5	
Coal blossom, Pocahontas No. 8.....	1.5	135	15′
Pocahontas Group (385′)			
Fire clay	2	137	
Shale, sandy, and concealed.....	18	155	
Sandstone, massive, friable, coarse grained, Flattop Mountain.....	35	190	
Shale, sandy, and slaty.....	3	193	

	Thickness. Feet.	Total. Feet.	
Coal blossom, Pocahontas No. 7	2	195	60′
Shale, slaty, and sandy	5	200	
Sandstone, massive, coarse grained, **Pierpont**	30	230	
Shale, sandy	9	239	
Coal blossom, Pocahontas No. 6	1	240	45′
Shale, sandy	15	255	
Sandstone, massive, **Eckman**	35	290	
Shale, sandy, and concealed	9	299	
Coal blossom, Pocahontas No. 4	1	300	60′
Shale, slaty	2	302	
Sandstone, **Upper Pocahontas**, massive, cliff, medium grained	73	375	
Shale, sandy, and concealed	15	390	
Coal, Pocahontas No. 3, croppy	10	400	100′
Shale, slaty	5	405	
Sandstone	40	445	
Shale, sandy	4	449	
Coal blossom, Pocahontas No. 2	1	450	50′
Fire clay and shale	5	455	
Sandstone, **Vivian**	20	475	
Shale, sandy	8	483	
Coal blossom, Pocahontas No. 1	2	485	35′
Shale, sandy, and concealed	15	500	
Sandstone, massive, elevation, 2310′ B	20	520	

SUMMERS COUNTY SECTIONS.

JUMPING BRANCH DISTRICT.

Jumping Branch District lies in the western part of Summers County, being bounded on the west and north by Raleigh County, and containing a considerable area of the basal coal measures of the Pottsville, as illustrated by sections to follow.

An aneroid section by Krebs, descending from a high summit on Whiteoak Mountain, southward along road to Jumping Branch, 1.2 miles northwest of Jumping Branch P. O., gives this section:

Section 1.2 Miles Northwest of Jumping Branch P. O., Jumping Branch District.

Pocahontas Group (342′)	Thickness. Feet.	Total. Feet.	
Sandstone and concealed	55	55	
Coal blossom, Pocahontas No. 6	3	58	58′
Sandstone and concealed	82	140	
Coal blossom, Pocahontas No. 5	2	142	84′
Shale and fire clay	10	152	

	Thickness. Feet.	Total. Feet.	
Shale, sandy, buff	18	170	
Coal blossom, Pocahontas No. 4	2	172	30′
Shale, dark	3	175	
Sandstone, buff, massive	25	200	
Coal blossom, Pocahontas No. 3	1	201	29′
Shale, dark	3	204	
Sandstone, buff, massive	46	250	
Shale, dark	1	251	
Sandstone, buff	59	310	
Coal blossom, Pocahontas No. 1	3	313	112′
Sandstone	11	324	
Shale, dark, plant fossils	16	340	
Fire clay	2	342	
Mauch Chunk Series (368′)			
Shale, buff, sandy	33	375	
Shale, red	5	380	
Sandstone, fine grained, buff	40	420	
Shale, sandy, buff	30	450	
Shale, yellow	20	470	
Shale, sandy, buff	10	480	
Shale, red	20	500	
Sandstone, green	30	530	
Shale, yellow	10	540	
Shale, red	30	570	
Sandstone, buff	10	580	
Shale, yellow	10	590	
Shale, red	10	600	
Shale, yellow	5	605	
Shale, red	5	610	
Shale, red and yellow, to Branch, elevation, 2410′ L	100	710	

The foregoing section was taken to the rise so that the intervals given above are too small.

An aneroid section by Krebs, descending from a summit along road southwestward to Bluestone River at Streeter P. O., gives the following:

Section at Streeter P. O., Jumping Branch District.

	Thickness. Feet.	Total. Feet.	
Pocahontas Group (177′)			
Sandy shale and concealed	40	40	
Coal blossom, Pocahontas No. 3	1	41	41
Sandy shale and concealed	55	96	
Fire clay, **Pocahontas No. 2**, dark	1	97	56
Sandstone and concealed	80	177	
Mauch Chunk Series (1030′)			
Sandy shale and concealed	34	211	
Shale, sandy, marine fossils	2	213	
Shale, sandy	77	290	

	Thickness. Feet.	Total. Feet.
Shale, light red	10	300
Shale, dark	20	320
Shale, red and yellow	80	400
Sandstone, coarse, buff	20	420
Shale, red and sandy	115	535
Sandstone, brown	5	540
Shale, red	10	550
Shale, sandy, and sandstone	20	570
Shale, red and yellow	65	635
Shale, yellow	5	640
Sandstone, buff brown	20	660
Shale, red	15	675
Shale, yellow	5	680
Sandstone, massive cliff	70	750
Shale, sandy, and concealed	20	770
Sandstone, yellowish green	20	790
Shale, red and sandy	20	810
Sandstone, green	10	820
Shale, sandy	15	835
Shale, red	10	845
Shale, sandy	45	890
Shale, red	15	905
Shale, dark	5	910
Shale, sandy, buff	20	930
Shale, red	10	940
Shale, brown	30	970
Shale, greenish yellow	20	990
Sandstone, massive, brown	20	1010
Shale, red	25	1035
Shale, brown, buff	15	1050
Shale, greenish buff	45	1095
Shale, sandy and red	65	1160
Sandstone, massive, greenish	40	1200
Sandstone to creek, elevation, 2110' L	10	1210

The foregoing section was taken to the dip so that the intervals are too large.

An aneroid section by Krebs, descending from a summit along road eastward to Beech Run and combined with the B. T. Baker well No. 1 (221), drilled by the Summers Oil and Gas Company, 2 miles southwest of Hinton, gives the following section:

Section 2 Miles Southwest of Hinton, Jumping Branch District.

Mississippian (3580')	Thickness.	Total.
Mauch Chunk Series (1975')	Feet.	Feet.
Sandstone, fine grained	40	40
Shale, sandy	25	65

	Thickness. Feet.	Total. Feet.
Shale, limy	12	77
Limestone	3	80
Shale, red and sandy	100	180
Shale, sandy	20	200
Limestone, dark gray	20	220
Sandstone, buffish	10	230
Shale, sandy	5	235
Limestone	5	240
Shale, red	15	255
Shale, yellow	10	265
Shale, red	15	280
Shale, yellow	10	290
Sandstone, buff	45	335
Shale, red	5	340
Limestone, Hinton, dark, bluish, forming cliff, top portion full of marine fossils	55	395
Shale, yellow	10	405
Shale, red	35	440
Shale, dark, red	25	465
Shale, red and sandy	60	525
Sandstone, brown	5	530
Shale, red	25	555
Sandstone, brown	5	560
Shale, yellow	5	565
Shale, red	35	600
Shale, yellow	10	610
Sandstone, dark brown	20	630
Shale, red	75	705
Shale, greenish yellow	3	708
Shale, red	2	710
Sandstone, dark buff	5	715
Shale, red	35	750
Sandstone, dark buff	15	765
Shale, red	10	775
Shale, green	5	780
Sandstone, brown	18	798
Shale, green	2	800
Sandstone, dark	10	810
Shale, red	40	850
Sandstone, dark	10	860
Shale, greenish	30	890
Shale, red	20	910
Sandstone, dark brown	10	920
Shale, yellow and red	5	925
Sandstone, dark buff	5	930
Shale, yellow, to top of well, at 1586′ A. T., thence with boring	25	955
Conductor	23	978
Lime	77	1055
Red rock	70	1125
Lime	15	1140
Red rock	125	1265
Lime	40	1305
Red rock	150	1455
Sand	20	1475

		Thickness. Feet.	Total. Feet.
Lime		30	1505
Slate		10	1515
Lime		40	1555
Red rock		25	1580
Lime		25	1605
Slate, black		80	1685
Sand		20	1705
Little Lime		170	1875
Slate		100	1975
Greenbrier Limestone (1057′)			
Lime, white.....130′			
Lime, black.....130			
Lime, brown.....320			
Lime, white.....205			
Lime, black..... 52			
Lime, white..... 43	**Big Lime**.....	1057	3032
Lime, black..... 82			
Sand 8			
Lime, gray..... 45			
Lime 10			
Lime, blue..... 27			
Lime, black..... 5			
Pocono Sandstones (543′)			
Red rock..... 13′			
Sand, white..... 7			
Red rock..... 38			
Sand, gray..... 10	**Big Injun Sand**....	119	3151
Sand, white..... 10			
Sand, red..... 10			
Sand, gray..... 31			
Slate, black		14	3165
Slate and shells		20	3185
Sand, gray		15	3200
Slate, black		5	3205
Slate and shells		24	3229
Slate, black		6	3235
Slate and shells		15	3250
Sand, gray		15	3265
Slate, black, and shells		10	3275
Sand, gray		10	3285
Slate, black		13	3298
Slate and sand shells		47	3345
Lime, gray, sandy		55	3400
Sand and slate shells		23	3423
Lime, gray, sandy		42	3465
Slate and lime shells		90	3555
Sand, hard, black..... 10′			
Lime, gray, sandy..... 15	**Berea ?**.....	25	3580
Devonian (39)			
Slate and shells		39	3619

The foregoing section began about 1200 feet under the base of the Pottsville Series which would make the thickness

of the Mauch Chunk Shales at this point 3175 feet. (See page 76, where the Pottsville-Hinton Limestone interval is only 1060 feet).

SUMMARY.

The following table gives not only the thickness of the Pennsylvanian, Mississippian and Devonian, exhibited by the foregoing general sections, but it also gives, in most cases, the thickness of the several series under each. A line of dots under a series indicates that the formation was not exposed or penetrated by boring when the latter is used in the section; and a question mark, that the series was present but could not be separated from the formation either overlying or underlying it. In many instances, thicknesses are either too great or too little, owing to the dip of the strata prevailing at that point. An explanation accompanies each section giving the peculiar conditions under which it was determined:

Table Showing Thickness in Feet of Stratified Rocks in Raleigh, Mercer and Summers Counties.

Place Measured.	Pennsylvanian					Mississippian				Devonian	Total Section
	Allegheny	Kanawha	New River	Pocahontas	Total	Mauch Chunk	Greenbrier Limestone	Pocono Sandstones	Total	Catskill	
Barn, 1.5 mi. N. E.			?	?	800.0	....	....	....	....	....	800.0
Basin, 1.7 mi. N. E.			510	320	830.0	....	....	....	....	....	830.0
Beaver, P. O.			?	?	455.0	....	....	....	....	....	455.0
Bolt, 1 mi. N. W.		627	303	....	930.0	....	....	....	....	....	930.0
Camp Creek P. O., 2 mi. N. W.				440	440.0	260	....	....	260	....	700.0
Clarks Gap			222	238	460.0	....	....	....	....	....	460.0
Dorothy	244	1461.9	?	?	2503.6	....	....	....	....	....	2503.6
Dry Creek, 1.2 mi N. E.		1290	80	....	1370.0	....	....	....	....	....	1370.0
Eccles		26	827.2	....	853.2	....	....	....	....	....	853.2
Glade, 0.5 mi. W.			?	?	610.0	898	....	....	898	....	1508.0
Grandview			?	?	736.6	427	....	....	427	....	1163.6
Herberton		985	727.2	....	1712.2	....	....	....	....	....	1712.2
Hinton				340	340.0	1650	....	....	1650	....	1990.0
Hinton, 2 mi. S. W.						1975	1057	548	3580	39	3619.0
Jenny Gap			995	243	1238.0	....	....	....	....	....	1238.0
Jumping Branch P. O., 1.2 mi. N. W.				342	342.0	368	....	....	368	....	710.0
Kingston, 1 mi. N.	90	1475	?	?	2865.0	40	....	....	40	....	2905.0
Launa, 1 mi. S.	190	1370	.....	....	1560.0	....	....	....	....	....	1560.0
Pluto, ½ mi. S.			?	?	460.0	90	....	....	90	....	550.0
Pocahontas			135	385	520.0	....	....	....	....	....	520.0
Sandstone Falls						1355	....	....	1355	....	1355.0
Springton, 4 mi. N. E.			?	?	770.0	....	....	....	....	....	770.0
Squealer Knob		1405	.....	....	1405.0	....	....	....	....	....	1405.0
Streeter P. O.				177	177.0	1033	....	....	1033	....	1210.0
Sweeneyburg			482.5		482.5	....	....	....	....	....	482.5
Tams (Gulf P. O)			?	?	870.0	....	....	....	....	....	870.0
Terry			?	?	467.0	398	....	....	398	....	865.0
Tolley Station			637.3	....	637.3	....	....	....	....	....	637.3

CHAPTER V.

STRATIGRAPHY—THE ALLEGHENY SERIES.

The series of rock strata from the Homewood Sandstone to and including the Upper Freeport Coal has been designated the **Allegheny Series** by the geologists of the First Geological Survey of Pennsylvania, because it was first developed and explored along the Allegheny River. Raleigh County has very little of the Allegheny Series left, since it has nearly all been eroded, and occurs only in the highest summits on Kayford, Coal River and Cherry Pond Mountains. The thickness is from 200 to 250 feet. In connection with sections already published in Chapter IV, a few more sections will now be given.

An aneroid section by Krebs, descending from a high summit on the Raleigh-Kanawha County Line, southward along the road to Clear Fork of Coal River, ½ mile west of Colcord, gives the following:

Section ½ Mile West of Colcord, Clear Fork District.

	Thickness. Feet.	Total. Feet.	
Allegheny Series (191′)			
Shale, dark, sandy	40	40	
Sandstone, buff and medium coarse	60	100	
Shale, sandy, and concealed, bench	10	110	
Sandstone, East Lynn, coarse	40	150	
Coal, No. 5 Block (Lower Kittanning)	9	159	159′
Sandstone and concealed	31	190	
Coal blossom, Clarion	1	191	32′
Kanawha Group (1279′)			
Sandstone, coarse, buff..114′ / Sandstone, dark..... 2 } Homewood...	116	307	
Coal blossom, Stockton-Lewiston	3	310	119′
Shale, dark	2	312	
Sandstone	2	314	
Shale, dark	2	316	
Sandstone, massive	78	394	

	Thickness. Feet.	Total. Feet.	
Coal blossom, Coalburg	1	395	85′
Sandstone and concealed	105	500	
Shale, sandy, limy	5	505	
Sandstone and concealed	65	570	
Coal blossom, Winifrede	3	573	178′
Sandstone and concealed	25	598	
Sandstone, massive	7	605	
Coal blossom, Chilton "A"	1	606	33′
Shale, dark, sandy	4	610	
Sandstone and concealed	45	655	
Shale, sandy	5	660	
Sandstone, massive	47	707	
Shale, sandy, coarse	30	737	
Coal blossom, Hernshaw	1	738	132′
Shale, sandy	4	742	
Sandstone and concealed	28	770	
Coal blossom	1	771	
Shale, sandy	24	795	
Sandstone	10	805	
Shale, sandy, with iron ore nodules	5	810	
Shale, sandy, and concealed	20	830	
Coal blossom, Cedar Grove	2	832	94′
Sandstone, massive	23	855	
Sandy shale and concealed	15	870	
Sandy shale and sandstone	8	878	
Coal, Alma	1	879	47
Shale, sandy	3	882	
Sandstone	3	885	
Shale, sandy, and concealed	43	928	
Coal, Campbell Creek (No. 2 Gas)	2	930	51′
Sandy shale and concealed	29	959	
Coal, Campbell Creek (No. 2 Gas)	1	960	30′
Sandstone, Brownstown, massive	45	1005	
Bench	5	1010	
Sandy shale and concealed	20	1030	
Sandstone, massive	20	1050	
Sandy shale and concealed	20	1070	
Shale, dark, sandy	30	1100	
Coal blossom, Eagle	1	1101	141′
Sandstone and concealed	24	1125	
Sandstone, massive, dark	45	1170	
Shale, sandy	2	1172	
Coal blossom, Little Eagle	1	1173	72
Shale, sandy	4	1177	
Sandstone, massive	20	1197	
Shale, sandy	30	1227	
Shale, sandy, and concealed	40	1267	
Shale, sandy, dark	3	1270	
Sandstone	3	1273	
Limestone, Eagle, impure, dark	1	1274	
Shale, dark	6	1280	
Sandy shale and concealed	25	1305	
Sandstone	20	1325	
Shale, sandy, and concealed	10	1335	
Sandstone, gray	15	1350	

	Thickness. Feet.	Total. Feet.	
Coal blossom, Lower War Eagle	1	1351	178′
Shale, sandy, and concealed	29	1380	
Sandstone, gray	15	1395	
Shale, dark, sandy	10	1405	
Shale, sandy	30	1435	
Shale, dark, sandy	5	1440	
Sandstone, massive, buff, to level of Clear Fork, elevation, 1011′ L.	30	1470	

Ivy Knob is one of the highest summits on Guyandot Mountain, and is situated on the divide between Clear Fork of Guyandot River and Drews Creek of Marsh Fork of Coal River. The following aneroid section was measured by Krebs descending eastward from this knob to Martin Fork of Peachtree Creek four miles south of Citie P. O.:

Section 4 Miles South of Citie P. O., Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Allegheny Series (160′)			
Shale, sandy	10	10	
Sandstone, gray, medium coarse grained, **East Lynn**	140	150	
Bench, **No. 5 Block Coal horizon**	10	160	160′
Kanawha Group (1360′)			
Sandstone, **Homewood**, forming "chimney towers"	110	270	
Bench, **Stockton-Lewiston Coal horizon**	10	280	
Sandstone and concealed	180	460	
Large bench, **Winifrede Coal horizon**	10	470	310′
Sandstone and concealed	70	540	
Coal blossom, Chilton	1	541	71′
Sandstone and concealed, **Lower Chilton**	85	626	
Bench	9	635	
Sandstone, massive	55	690	
Shale, sandy, and concealed	130	820	
Bench	10	830	
Sandstone, shale, and concealed	70	900	
Bench, **Alma Coal horizon**	10	910	369′
Sandstone and concealed	257	1167	
Shale	3	1170	
Coal, Eagle	7	1177	267′
Shale	3	1180	
Sandstone, massive, **Decota**	57	1237	
Shale, sandy, and concealed	193	1430	
Coal, Lower War Eagle	8	1438	261′
Sandstone and concealed	10	1448	
Shale, dark	10	1458	
Sandstone, massive	30	1488	
Shale, sandy	8	1496	
Shale, limy	2	1498	
Sandstone and concealed to Martin Fork, elevation, 1920′ B.	22	1520	82′

DESCRIPTION OF THE ALLEGHENY SERIES IN RALEIGH COUNTY.

TABLE OF FORMATIONS.

East Lynn Sandstone.
No. 5 Block (Middle and Lower Kittanning) Coal.
Clarion Sandstone.
Clarion Coal.

The Freeport Coals and Sandstones were not recognized in Raleigh County, and, if present, occur on the highest summits of Kayford, Coal River and Cherry Pond Mountains.

THE EAST LYNN SANDSTONE.

The East Lynn Sandstone caps the summits of Kayford Mountain, and is from 60 to 80 feet thick. It is a coarse grained, gray sandstone and sometimes pebbly and massive.

The following is a section taken on a summit 1.5 miles northwest of Colcord:

	Feet.
Shale, dark, sandy	10
Sandstone, East Lynn, gray, coarse	60
Coal, No. 5 Block, elevation, 2460′ B	

The following section was taken on Cherry Pond Mountain, on the head of Shumate Creek, near Elijah Bradley's:

	Feet.
Shale, sandy	20
Sandstone, East Lynn, coarse grained, friable	50
No. 5 Block Coal, elevation, 2600′ B	

The foregoing sections exhibit the general structure of the East Lynn Sandstone left uneroded in Raleigh County.

THE NO. 5 BLOCK (MIDDLE AND LOWER KITTANNING) COAL.

At 1 to 10 feet under the East Lynn Sandstone, there occurs the most persistent coal bed in the Allegheny Series. This bed has been mined in the Kanawha Valley for three quarters of a century and was named the **No. 5 Block Coal,** and possibly correlates with the **Middle and Lower Kittanning**

Coals of the northern part of West Virginia. In Raleigh County, this bed of coal ranges in thickness from 6 to 10 feet, but the erosive forces have carried nearly the whole area away, so that only a small acreage now remains in the summits of Kayford, Coal River and Cherry Pond Mountains, showing that an immense area of coal has been eroded. No commercial mines are operating in this bed of coal; but it is mined for local fuel at several places in Marsh Fork and Clear Fork Districts, Raleigh County.

Clear Fork District.

Early Stanley Opening—No. 101 on Map II.

Clear Fork District, on Kayford Mountain, 1.5 miles northwest of Colcord; section by Krebs; **No. 5 Block Coal**; Butts, N. 48° W.; faces, N. 42° E.; elevation, 2520′ B.

			Ft.	In.
Sandy shale			1	0
Coal, splint	4′	0″		
Slate, 0′ to	0	1		
Coal, splint	2	0		
Coal, block, hard	3	0	9	1
Slate floor				

The coal is mined for local fuel by Early Stanley Heirs, the opening being driven under cover about 40 feet.

The analysis of a sample collected from the second, fourth and fifth items in the above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 101.**

Jack Stanley Opening—No. 102 on Map II.

Clear Fork District, on head of Laurel Branch, one mile north of Lawson; section by Krebs; **No. 5 Block Coal**; Butts, N. 42° W.; faces, N. 48° E.; elevation, 2365′ B.

			Feet.
Sandstone roof, **East Lynn**			10
Coal, splint	3′	0″	
Coal, soft, gas	1	0	
Coal, block, hard	5	0	9
Slate floor			

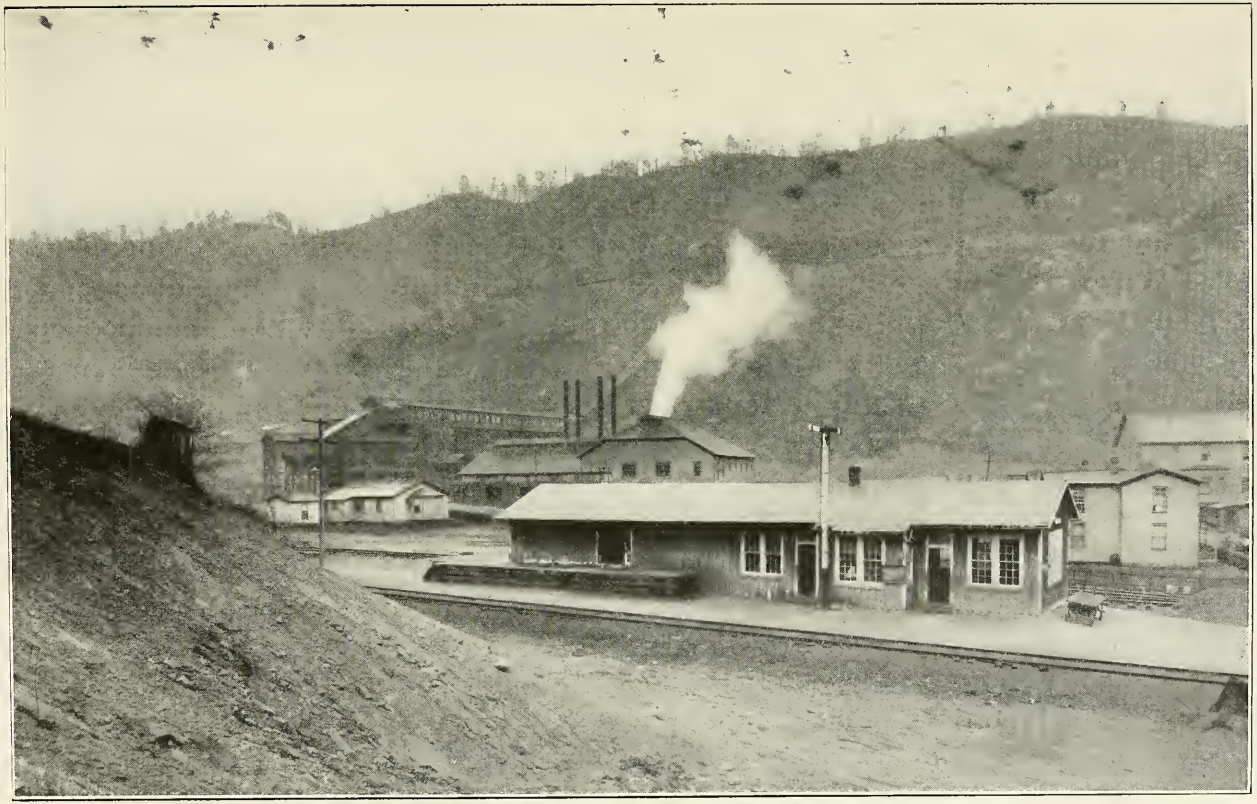

PLATE V.—Station and tipple at Tams on Winding Gulf and mine in Beckley Coal half-way up the mountain.

Coal mined for local fuel, the opening being driven in about 80 feet.

Marsh Fork District.

Four States Coal and Coke Company Opening. No. 103 on Map II.

Marsh Fork District, on Coal River Mountain, one mile south of Dorothy; section by Krebs and Teets; **No. 5 Block Coal**; Butts, N. 40° W.; faces N. 50° E.; elevation, 2502′ B.

				Ft.	In.
1.	Slate roof				
2.	**Coal**, splint	0′	7″		
3.	Slate, 0′ to	0	1		
4.	**Coal**, block	0	8		
5.	**Coal**, gray splint	0	7		
6.	**Coal**, dark splint	0	8		
7.	**Coal**, block	1	5		
8.	**Coal**, block, gray	1	6		
9.	**Coal**, gray splint, (slate floor)	4	2	9	8

Prospect opening driven under cover about 20 feet.

The analysis of sample collected from Nos. 2, 4, 5, 6, 7, 8, and 9, as reported by Messrs. Hite and Krak, is published in the table of coal analyses under **No. 103.**

The engineer of the Four States Coal Company, Mr. L. A. Gates, reports about 400 acres of this coal on their property on Coal River Mountain.

Passing to the southwest across Marsh Fork to Cherry Pond Mountain, this coal bed has been opened in several places for local fuel use.

Elijah Bradley Local Mine Opening—No. 104 on Map II.

Marsh Fork District, on Cherry Pond Mountain, on head of Left Fork of Shumate Creek, 2.2 miles southeast of Launa; section by Krebs; **No. 5 Block Coal**; Butts, N. 45° W.; faces, N. 45° E.; elevation, 2600′ B.

				Ft.	In.
1.	Slate roof				
2.	**Coal**, gas	3′	0″		
3.	**Coal**, splint (slate floor)	4	0	7	0

The analysis of a sample collected from Nos. 2 and 3, as reported by Messrs. Hite and Krak, is published in the table of coal analyses under **No. 104.**

Passing to the east side of the mountain, another opening has been made in this seam of coal, as follows:

Elijah Bradley Prospect Opening—No. 105 on Map II.

Marsh Fork District, on Cherry Pond Mountain, on head of Ridge Fork of Shumate Creek, 2 miles southeast of Launa; section by Krebs; **No. 5 Block Coal;** 5 feet under cover; Butts, N. 45° W.; faces, N. 45° E.; elevation, 2600′ B.

			Ft.	In.
Shale roof				
Coal, splint	0′	4″		
Shale, gray	0	5		
Coal, splint	0	2		
Shale, gray	0	5		
Coal, splint, visible	3	2	4	6

Rowland Land Company Prospect Opening—No. 106 on Map II.

Marsh Fork District, on Cherry Pond Mountain, 1.3 miles northwest of Launa; section by Teets; **No. 5 Block Coal;** 10 feet under cover; Butts, N. 40° W.; faces, N. 50° E.; elevation, 2470′ B.

			Ft.	In.
Sandstone, **East Lynn**				
Coal, splint	0′	8″		
Fire clay	1	9		
Coal, block	1	1		
Shale, gray	1	5		
Coal, block (slate floor)	4	8	9	7

Rowland Land Company Local Mine Opening—No. 107 on Map II.

Marsh Fork District, on head of Hazy Creek, 2.1 miles southwest of Launa; section by Teets; **No. 5 Block Coal;** butts, N. 45° W.; faces, N. 45° E.; elevation, 2340′ B.

	Ft.	In.
Sandstone, **East Lynn**	15	0
Coal, block (slate floor)	6	8

Rowland Land Company Prospect Opening—No. 108 on Map II.

Marsh Fork District, on waters of Hazy Creek, 1.8 miles southwest of Hecla; section by J. S. Cunningham, Chief Engineer for E. J. Berwind; elevation, 2272′ B.

				Ft	In.
1.	Sandstone, East Lynn			10	0
2.	Coal, block	8′ 0″			
3.	Shale	7 0	No. 5 Block	18	0
4.	Coal, splint	2 0			
5.	Coal, cannel	1 0			
6.	Sandy shale and concealed			65	0
7.	Coal, splint, hard	3′ 6″	Clarion	7	0
8.	Coal, splint, harder (Slate floor)	3 6			

A sample collected from Nos. 7 and 8 by J. S. Cunningham and analyzed by the Chief Chemist of the New River and Pocahontas Consolidated Coal Company, Berwind, W. Va., gave the following results:

	Per cent.
Moisture	2.74
Volatile Matter	33.98
Fixed Carbon	56.01
Ash	6.612
Sulphur	0.658
	100.000

A further discussion of the character, quality and probable available area and tonnage of the No. 5 Block Coal will be given on subsequent pages in the Chapter on Coals.

Probable Amount of No. 5 Block Coal Available.

Raleigh County by Districts.	Thickness of Coal. Assumed.	Sq. Miles.	Acres.	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	8 feet	0.9	576	200,724,480	802,898
Marsh Fork	9 feet	2.8	1,792	702,535,680	2,810,143
Totals		3.7	2,368	903,260,160	3,613,041

CHAPTER VI.

STRATIGRAPHY—THE POTTSVILLE SERIES.

Geologists and paleobotanists have agreed that the Pottsville Series begins with the top of the Mauch Chunk Shale, and ends with the top of the Homewood Sandstone. In the northern part of the State, this distance is 250 to 350 feet, while in the extreme southern part of the State this distance is more than 3,800 feet.

The reader is referred to a general description of the Pottsville Series as given by Dr. I. C. White in Volume II, pages 611-12, West Virginia Geological Survey, 1903.

The Pottsville Series of West Virginia has been further divided by Dr. I. C. White into three great groups, named respectively Upper, Middle, and Lower Pottsville, as shown in the following scheme of classification:

Pottsville Series	Upper	Beaver (Kanawha) Group.	Homewood Sandstone Stage.
			Mercer Stage.
			Connoquenessing Sandstone Stage.
	Middle	New River Group.	Nuttall Sandstone.
			Sewell Coal.
			Raleigh Sandstone.
			Beckley Coal.
			Quinnimont Sandstone and Shales
			Fire Creek Coal.
	Lower	Pocahontas Group.	Flattop Mountain Sandstone.
			Pocahontas Coals, Nos. 6, 5, 4, 3, 2 and 1, with intervening sandstone and shales.
			Pocahontas Sandstones.

In this classification the name of each group is given from the region where the rocks of the same were first studied and classified. The Upper Pottsville sediments were first studied and its principal members described in detail along the Beaver River of Lawrence and Beaver Counties, Pennsylvania, by Dr. White in 1876, and from these studies Prof. Lesley named the rocks involved the **Beaver Group.**

The **Upper Pottsville** or **Kanawha Group** extends from the top of the Homewood Sandstone to the base of the Gilbert Coal, or top of the Nuttall Sandstone. The **Middle Pottsville** or **New River Group** extends from the top of the Nuttall Sandstone to the top of the Flattop Sandstone. The **Lower Pottsville Series,** or **Pocahontas Group,** extends from the top of the Flattop Mountain Sandstone to the top of the Mauch Chunk Red Shale.

KANAWHA GROUP.

In addition to the sections already published, other sections will now be given showing the Kanawha Group.

The following section was measured by Krebs, descending northwest to Little Marsh Fork, ½ mile west of Emerson P. O.:

Section 0.5 Mile West of Emerson P. O., Marsh Fork District.

	Thickness.		Total.		
Kanawha Group (1115′)	Ft.	In.	Ft.	In.	
Sandstone and concealed	200	0	200	0	
Coal, Winifrede (Dorothy)	7	0	207	0	207′
Shale, sandy	10	0	217	0	
Sandstone, massive	38	0	255	0	
Sandy shale and concealed	2	0	257	0	
Sandstone, massive, green	19	0	276	0	
Coal blossom, Chilton "A"	1	0	277	0	70′
Shale, sandy	2	0	279	0	
Sandstone, massive	78	0	357	0	
Coal 2′ 2″					
Shale, dark 0 1 } **Chilton**	3	3	360	3	83′ 3″
Coal, splint 1 0					
Shale, sandy	0	9	361	0	
Sandstone, massive	40	0	401	0	
Shale, sandy	5	0	406	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, **Hernshaw**, massive	85	0	491	0	
Coal, Hernshaw	7	7	498	7	
Sandy shale and concealed	17	5	516	0	
Limestone, **Dingess**, impure	2	0	518	0	
Sandstone and concealed	38	0	556	0	
Shale, sandy	2	0	558	0	
Sandstone and concealed	195	0	753	0	
Bench, **Campbell Creek (No. 2 Gas) Coal horizon, Upper Bench**	5	0	758	0	
Sandstone and concealed	19	0	777	0	
Coal blossom, Campbell Creek (No. 2 Gas), Lower Bench	1	0	778	0	417′ 9″
Fire clay	2	0	780	0	
Sandy shale and concealed	36	0	816	0	
Limestone, dark blue	2	0	818	0	
Sandstone and concealed	15	0	833	0	
Coal, Powellton	1	6	834	6	56′ 6″
Fire clay	2	6	837	0	
Sandstone and concealed	207	0	1044	0	
Coal, gas, Little Eagle	2	4	1046	4	211′ 10″
Sandstone and concealed to Little Marsh Fork, elevation, 1080′ B	68	8	1115	0	

Another aneroid section by Krebs, descending from a low gap between Clear Fork and Little Marsh Fork, southeastward along road to Emerson P. O., gives the following:

Section at Emerson P. O., Marsh Fork District.

	Thickness. Feet.	Total Feet.
Kanawha Group (430′)		
Shale, sandy, and concealed	20	20
Coal, Alma	3	23
Shale, sandy, and concealed	67	90
Coal, Campbell Creek (No. 2 Gas)	3.5	93.5
Sandstone and concealed	104.5	298
Shale, sandy, and concealed	5	303
Sandstone, massive	30	333
Shale, sandy, and concealed	10	343
Sandstone	37	380
Shale, sandy, and concealed, to Little Marsh Fork, elevation, 1100′ B	50	430

The foregoing section begins about 440 feet under the Winifrede Coal.

Stink Run flows into Marsh Fork from the north, one mile southeast from Launa P. O., where the following aneroid section was obtained by Krebs, descending said run from the top of the hill southward to its mouth:

Section 1 Mile Southeast of Launa, Marsh Fork District.

Kanawha Group (1233′)	Thickness. Feet.	Total. Feet.	
Sandstone, and concealed from top of hill..	750	750	
Sandstone, massive	50	800	
Coal, Matewan? (Eagle)	2	802	802′
Shale, dark	5	807	
Sandstone, massive, brown	70	877	
Shale, sandy	8	885	
Coal 1′ / Shale, sandy 2 / Sandstone 8 / **Coal**, gas 2 — **Little Eagle Coal**	13	898	96′
Shale, sandy	5	903	
Sandstone, massive, **Grapevine**	55	958	
Shale, dark, sandy, **Eagle**	25	983	
Sandstone, massive, **Lower War Eagle**	55	1038	
Shale, dark, sandy	2.5	1040.5	
Coal, Lower War Eagle	1.5	1042	144′
Shale, dark	14.5	1056.5	
Coal, gas 1.5′ / Shale, dark 3 / Sandstone, dark 7 / Shale, sandy 5.8 / **Coal** 1.2 — **Glenalum Tunnel**	18.5	1075	
Shale, sandy	3	1078	
Sandstone, **Lower Gilbert**	10	1088	
Shale, dark	23	1111	
Limestone, **Dorothy**, dark gray, marine fossils	2	1113	
Shale, sandy, and concealed	20	1133	
Sandstone, massive, **Nuttall**, to Marsh Fork, elevation, 1020′ B.	100	1233	

Another aneroid section by Krebs, descending from the summit between Shumate Creek and Marsh Fork, northwestward to Shumate Creek, 2 miles northwest of Citie P. O., gives the following:

Section 2 Miles Northwest of Citie P. O., Marsh Fork District.

Kanawha Group (716′)	Thickness. Feet.	Total. Feet.	
Sandy shale and concealed	60	60	
Coal, (Powellton)	5	65	65′
Sandstone and concealed	20	85	
Sandstone	20	105	
Sandstone and concealed	7	112	
Coal blossom, Matewan	3	115	50′
Concealed	20	135	
Sandstone	42	177	
Coal, Eagle	3	180	65′
Sandstone and concealed	258	438	

	Thickness. Feet.	Total. Feet.	
Coal blossom, Lower War Eagle	2	440	260′
Sandstone and concealed	58	498	
Limestone, Dorothy, marine fossils	3	501	
Shale, dark, sandy	10	511	
Sandstone and concealed	44	555	
Coal, gas, Gilbert	1	556	116′
Shale, sandy	20	576	
Sandstone, **Nuttall**, massive, to Shumate Creek, elevation, 1010′ B	140	716	

The foregoing section was taken to the dip, so that the intervals between some of the coals are too great.

An aneroid section by Krebs, from a divide between Clay Branch and Shumate Creek, descending eastward along path to mouth of Clay Branch, gives the following:

Clay Branch Section, Marsh Fork District.

Kanawha Group (805′)	Thickness. Feet.	Total. Feet.	
Sandy shale and concealed	45	45	
Sandstone, massive, brown	45	90	
Sandy shale and concealed	30	120	
Sandstone, **Eagle**, massive, buffish gray	50	170	
Shale, sandy, and concealed, **Eagle Coal horizon**	10	180	
Sandstone, **Decota**, massive	95	275	
Shale, sandy, and concealed	85	360	
Shale, dark	10	370	
Sandstone	50	420	
Shale, dark	8	428	
Coal blossom, Lower War Eagle	2	430	430′
Sandstone, massive	15	445	
Sandstone, and concealed	80	525	
Limestone, Oceana (Dorothy?)	2	527	
Shale, sandy, and concealed	178	705	
Sandstone, **Nuttall**, and concealed, to Clay Branch, elevation, 1280′ B	100	805	

An aneroid section by Krebs, descending from a high summit northward into Spring Branch of Drews Creek, ½ mile from its mouth and 2.5 miles southwest from Citie P. O., Marsh Fork District, gives the following:

Section 2.5 Miles Southwest of Citie P. O., Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (885′)			
Sandstone, massive, forming "chimney tops," **Hernshaw** and **Upper Cedar Grove**	125	125	
Sandy shale and concealed	77	202	
Slate, black	3	205	
Sandstone and concealed	140	345	
Coal, Alma	5	350	350′
Sandstone and concealed	40	390	
Shale, dark, full of plant fossils	8	398	
Coal, Campbell Creek (No. 2 Gas), Upper Bench	5	403	
Slate	2	405	
Sandstone, massive, **Brownstown**	64.8	469.8	
Coal, Powellton	0.2	470	120′
Sandstone and concealed	53	523	
Coal, Matewan	3	526	56′
Sandstone and concealed	36	562	
Slate	1	563	
Coal, Eagle "A"	1.8	564.8	38.8′
Concealed	11.2	576	
Coal, Eagle	2.6	578.6	13.8′
Sandstone and concealed	51.4	630	
Coal, Little Eagle	6.2	636.2	57.6′
Sandstone and concealed	243.8	880	
Limestone, **Oceana**, dark	2	882	
Concealed to Spring Branch, elevation, 1655′ B	3	885	

An aneroid section measured by Krebs, descending westward from summit to Drews Creek at the mouth of Bluegrass Branch, 3.5 miles southwest from Citie P. O., gives the following:

Section 3.5 Miles Southwest of Citie P. O., Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (1016′)			
Sandy shale, sandstone, and concealed	300	300	
Bench	10	310	
Sandstone, massive	72	382	
Coal blossom, Alma	3	385	385′
Sandstone and concealed	37	422	
Coal blossom, Campbell Creek (No. 2 Gas), Upper Bench	2	424	
Sandstone	10	434	
Coal blossom, Campbell Creek (No. 2 Gas), Lower Bench	1	435	50′

	Thickness. Feet.	Total. Feet.	
Sandstone and concealed	69	504	
Coal, Powellton, gas	1	505	70′
Shale, dark, iron ore nodules	1	506	
Shale, gray	2	508	
Sandstone, grayish	20	528	
Shale, sandy	2	530	
Limestone, gray, dark	2	532	
Shale, sandy	2	534	
Sandstone, buffish, micaceous	26	560	
Coal, Matewan	2.2	562.2	57.2′
Slate, dark	1.8	564	
Shale, sandy, and sandstone	40	604	
Coal, Eagle "A"	1.5	605.5	
Slate	0.5	606	
Sandstone	10	616	
Coal, Eagle	3	619	
Slate	1	620	57.8′
Sandstone, **Decota**	40	660	
Coal, Little Eagle	4	664	44′
Shale, sandy	250	914	
Shale, **Dorothy?**, dark, limy, marine fossils	2	916	
Shale, sandy, and concealed to Drews Creek, elevation, 1755′ B	100	1016	

The following section was measured by Krebs, descending from a summit between Clear Fork and Stover Fork of Sycamore Creek, southwestward along path to mouth of Stover Fork, 3 miles southeast of Colcord P. O.:

Section 3 Miles Southeast of Colcord P. O., Clear Fork District.

Kanawha Group (1300′)	Thickness. Feet.	Total. Feet.	
Sandy shale, sandstone, and concealed	850	850	
Shale, sandy, brownish, **Eagle Coal horizon**	10	860	860′
Shale, sandy	94	954	
Shale, sandy, and concealed	3	957	
Shale, dark	2	959	
Coal, Cedar	0.5	959.5	99.5′
Shale, dark	0.5	960	
Sandstone, massive	18	978	
Sandy shale and concealed	10	988	
Sandstone, massive	42	1030	
Sandy shale and concealed	58	1088	
Shale, dark, limy	5	1093	
Sandy shale and concealed	10	1103	
Shale, gray, limy	5	1108	
Sandstone, massive	14	1122	
Coal, Lower War Eagle	1	1123	163.5′
Sandstone, micaceous	3	1126	
Shale, dark, sandy	2	1128	

	Thickness. Feet.	Total. Feet.	
Sandstone, massive	20	1148	
Shale, dark, limy	10	1158	
Sandstone, massive	20	1178	
Sandy shale and concealed	20	1198	
Sandstone, massive, micaceous	30	1228	
Sandy shale and concealed	35	1263	
Shale, dark, limy	5	1268	
Sandstone and concealed	22	1290	
Coal blossom, Gilbert	1	1291	168
Sandstone, and concealed, to mouth of Stover Fork, elevation, 1315′ L	9	1300	

The following aneroid section was measured by Krebs, descending from a summit between Horse Creek and Right Fork of Sycamore Creek, northward to Right Fork of Sycamore, 2 miles southeast from Colcord P. O.:

Section 2 Miles Southeast from Colcord P. O., Clear Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (1577′)			
Sandy shale and sandstone	100	100	
Coal, Winifrede	10	110	110′
Sandstone and concealed	220	330	
Sandy shale and concealed	210	540	
Coal blossom, (Cedar Grove)	2	542	432′
Sandstone, shale, and concealed	98	640	
Shale, sandy, dark	20	660	
Sandstone, massive, and sandy shale	160	820	
Bench	10	830	
Sandy shale and concealed	118	948	
Coal blossom, Little Eagle?	1.5	949.5	
Shale, dark	2.5	952	
Sandstone and concealed	210	1162	
Bench	10	1172	
Sandstone and concealed	120	1292	
Sandy shale and concealed	160	1452	
Sandstone, massive	40	1492	
Sandy shale and concealed	50	1542	
Sandstone, current bedded	33	1575	
Shale, sandy	1	1576	
Coal blossom, Gilbert?	1	1577	
New River Group (63′)			
Sandstone, **Nuttall**, massive, to mouth of Right Fork, elevation, 1150′ B	63	1640	

The following aneroid section was obtained by Teets in the head of Dry Creek of Marsh Fork, by descending from a summit southwestward along trail to the head of Dry Creek:

Section 1 Mile Southeast of Pond Knob, Marsh Fork District.

Kanawha Group (895′)	Thickness. Feet.	Total. Feet.	
Sandy shale and concealed	90	90	
Coal blossom, Winifrede	1	91	91′
Sandy shale and concealed	109	200	
Concealed, bench	20	220	
Shale, sandy	70	290	
Concealed, bench	15	305	
Sandy shale and concealed	65	370	
Concealed, bench	10	380	
Sandy shale and concealed	275	655	
Concealed, bench	20	675	
Sandy shale and concealed	215	890	
Slate (1′ 10″)	2	892	
Coal, Eagle, (3′ 2″) elevation, 2040′ B	3	895	804′

Another aneroid section, measured by Teets, from a summit in Coal River Mountain at the head of Sycamore Cree of Clear Fork of Coal River, descending northeastward along a trail to the head of Sycamore Creek, gives the following:

Section 1.2 Miles East of Pond Knob, Clear Fork District.

Kanawha Group (1070′)	Thickness. Feet.	Total. Feet.	
Shale, sandy	100	100	
Coal blossom, Winifrede	1	101	101′
Sandy shale and concealed	149	250	
Limestone, Indian Gap, impure, marine fossils	1	251	150′
Sandy shale and concealed	70	321	
Concealed, bench	19	340	
Sandy shale and concealed	140	480	
Concealed, bench	20	500	
Sandstone and sandy shale	70	570	
Concealed, bench	15	585	
Sandstone and sandy shale	100	685	
Concealed, bench	20	705	
Sandy shale and sandstone	95	800	
Concealed, bench	10	810	
Sandstone and sandy shale	135	945	
Concealed, bench, **Eagle Coal horizon**	15	960	
Sandy shale and concealed	80	1040	
Concealed to bottom, elevation, 1770′ B	30	1070	

The following aneroid section was measured by Teets from a point on the Guyandot Mountain, descending northwestward along county and private road to the head of Peachtree Creek, one mile northwest of Redbird P. O., in the southeastern portion of Marsh Fork District:

Section One Mile Northwest of Redbird, Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (751′)			
Sandstone and sandy shale to low gap	90	90	
Fire clay, **Campbell Creek (No. 2 Gas) Coal horizon**	3	93	93′
Sandy shale and concealed	32	125	
Sandstone, **Brownstown,** massive, coarse grained, friable	45	170	
Sandy shale and concealed, iron ore nodules	57	227	
Coal blossom, Matewan	3	230	137′
Shale, sandy	5	235	
Sandstone, **Eagle,** massive, coarse grained	40	275	
Shale, sandy	16	291	
Coal blossom, Eagle	4	295	65′
Sandy shale and concealed	30	325	
Sandstone, **Decota,** massive, medium coarse grained	45	370	
Sandy shale and concealed	50	420	
Shale, slaty	10	430	
Sandy shale	13	443	
Fire clay, **Little Cedar Coal horizon**	2	445	150′
Sandstone, flaggy	30	475	
Shale, sandy	24	499	
Shale, slaty	1	500	
Sandy shale and concealed	25	525	
Coal, gas	0-11″	525-11″	
Shale, slaty, gray	11	536-11″	
Coal, gas 0′ 8″			
Slate, gray 0 2			
Coal, gas 1 9			
Slate, gray 0 7 — **Lower War Eagle**	4-2″	541-1″	96′ 1″
Coal, gas 0 9			
Coal, impure 0 3			
Slate	0-11″	542	
Sandstone and sandy shale	201	743	
Slate, dark, marine fossils, **Gilbert**	4	747	
Coal, gas 0′ 8″			
Slate, dark 0 0½			
Coal 0 3½ — **Gilbert**	2-9″	749-9″	208′ 8″
Slate, dark 0 1			
Coal, hard 1 8			
Slate	1-3″	751	
New River Group (49′)			
Sandstone and sandy shale, elevation, 1900′ B.	49	800	

The following aneroid section was measured by Teets from a point on Coal River Mountain just east of Pond Knob, descending southward along drain to the head of Dry Creek:

Section One Mile South of Pond Knob, Marsh Fork District.

		Thickness. Ft.	In.	Total. Ft.	In.	
Kanawha Group (1020′)						
Sandstone and concealed		94	0	94	0	
Slaty shale and concealed		6	0	100	0	
Coal ....0′ 10″						
Slate, gray....0 7						
Coal 0 2						
Slate, gray....0 9	Winifrede	12	2	112	2	112′ 2″
Coal 0 10						
Slate and concealed.7 0						
Coal, visible....2 0						
Sandstone and sandy shale		242	10	355	0	
Sandstone, massive, visible		5	0	360	0	
Slaty shale		1	8	361	8	
Coal, block....1′ 1 ″						
Slate, dark....0 1						
Coal 0 2						
Slate, gray....0 0½	Hernshaw	3	6	365	2	253′
Coal 0 5						
Bone 0 3						
Coal 1 5½						
Slate		1	10	367	0	
Sandstone and concealed		279	0	646	0	
Coal blossom, Little Alma		4	0	650	0	284′ 10″
Sandy shale		5	0	655	0	
Sandstone and concealed		17	0	672	0	
Sandstone, massive		16	0	688	0	
Coal, gas....0′ 10″	Campbell Creek					
Coal, blocky....1 2	(No. 2 Gas)	2	0	690	0	40′
Shale, slaty		10	0	700	0	
Sandstone and concealed		48	0	748	0	
Sandstone, massive		30	0	778	0	
Coal, gas....1′ 2 ″						
Slate, black....0 0¼	Powellton	2	0	780	0	90′
Coal 0 9¾						
Shale, slaty		10	0	790	0	
Sandstone and concealed		27	0	817	0	
Slate, dark, massive, fossil plants in top 10″		4	0	821	0	
Coal, Eagle, gas		3	2	824	2	44′ 2″
Slate		1	10	826	0	
Concealed and sandstone		46	0	872	0	
Coal, gas....0′ 8″						
Coal, splint....0 4						
Slate 0 2	Little Eagle..	3	4	875	4	51′ 2″
Coal, splint....1 0						
Coal, gas....1 2						
Slate		1	8	877	0	
Sandstone, sandy slate, and concealed.		132	0	1009	0	
Coal, Little Cedar?		1	0	1010	0	134′ 8″
Concealed, elevation, 1855′ B.		10	0	1020	0	

The following aneroid section was measured by Teets from a point in ridge between Righthand Fork of Rock Creek

and Sandlick Creek, about 2 miles northwest of Dameron, descending northwestward to school-house on Righthand Fork:

Section 2 Miles Northwest of Dameron, Marsh Fork District.

		Thickness. Feet.	Total. Feet.	
Kanawha Group (225′)				
Sandy shale and concealed		19	19	
Coal blossom, Lower War Eagle		1	20	20′
Sandstone, flaggy		20	40	
Shale, slaty		5	45	
Sandstone, massive, medium grained		40	85	
Shale, sandy		18	103	
Coal blossom, Glenalum Tunnel		2	105	85′
Sandy shale and concealed		80	185	
Sandy shale and concealed		40	225	
New River Group (155′)				
Sandstone 20′ Shale, sandy 10 Sandstone, coarse grained 29	**Nuttall**	59	284	
Coal blossom, Douglas "A"		1	285	170′
Shale, sandy		30	315	
Shale, slaty, dark		15	330	
Sandstone, massive		10	340	
Sandy shale and concealed		25	365	
Sandstone, massive, elevation, 1660′ B		15	380	

This section was measured to the dip and the intervals are too large.

The following aneroid section was obtained by Teets from a point in the Guyandot Mountain, just south of the Skinned Poplar Gap, in the western portion of Trap Hill District, descending northward to a point near Bolt:

Section just West of Bolt, Trap Hill District.

		Thickness. Feet.	Total. Feet.	
Kanawha Group (505′)				
Sandstone and sandy shale		30	30	
Sandstone, massive, **Eagle**		5	35	
Shale, slaty		4	39	
Coal, gas 0′ 11½″ Slate, gray 0 2½ **Coal**, gas 2 2 Slate, gray 0 1 **Coal**, gas 1 0	**Eagle**	4-5″	43-5″	
Slate		1-7″	45	
Sandstone, **Decota**, medium grained		50	95	
Sandy shale bench		15	110	
Sandstone, coarse grained, micaceous		60	170	

	Thickness. Feet.	Total. Feet.	
Sandy shale bench	10	180	
Sandstone and sandy shale	65	245	
Concealed	25	270	
Sandstone, massive, medium grained	45	315	
Sandy shale and concealed	75	390	
Sandstone, coarse grained, buff, micaceous	45	435	
Sandstone, coarse grained, friable, reddish	30	465	
Sandy shale, reddish	20	485	
Fire clay, dark, **Gilbert Coal horizon**	1	486	
Shale, sandy	19	505	
New River Group (210′)			
Sandstone, **Nuttall**, coarse grained, friable	65	570	
Shale, sandy	50	620	
Slate, cannelly	8	628	
Coal, impure 0′ 2″			
Coal 1 6	**Douglas** 2-6″	630-6″	587′ 1″
Slate, black 0 4½			
Coal, hard 0 5½			
Shale, sandy	24-6″	655	
Sandstone, massive, to Breckenridge Creek, elevation, 1985′ B	60	715	

The following aneroid section was obtained by Teets from a summit at the eastern end of Chestnut Flat Mountain and common corner of Trap Hill, Clear Fork and Town Districts, descending northwestward to the head of Sandlick Creek:

Section 2 Miles Northwest of Harper, Clear Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (193′)			
Shale, sandy, and concealed	50	50	
Sandstone, massive, medium grained	45	95	
Shale, sandy	30	125	
Sandstone, massive	10	135	
Shale, sandy, and concealed	38	173	
Fire clay	2	175	
Shale, sandy	10	185	
Shale, slaty	4	189	
Coal, Gilbert, good	1	190	190′
Shale, slaty	3	193	
New River Group (332′)			
Concealed	42	235	
Sandstone, **Nuttall**, massive, medium grained, friable	40	275	
Shale, sandy	10	285	
Sandstone, massive, gray buff colored, micaceous	35	320	
Shale, sandy	5	325	
Sandstone, **Lower Nuttall**, massive, coarse grained, friable, gray buff	30	355	
Shale, sandy	3	358	

	Thickness. Feet.	Total. Feet.
Fire clay	2	360
Shale, sandy	5	365
Sandstone and sandy shale	20	385
Shale, gray, slaty streaks	20	405
Sandstone, medium grained, gray buff	25	430
Shale, gray, slaty	5	435
Sandstone, massive, fine grained	15	450
Concealed and sandy shale	35	485
Sandstone, massive, micaceous, to Sandlick Creek	40	525

The following aneroid section was obtained by Krebs from a summit on Cherry Pond Mountain, descending northeast to Upper Big Branch, 1.5 miles west of Hecla:

Section 1.5 Miles West of Hecla, Marsh Fork District.

Kanawha Group (1250′)	Thickness. Feet.	Total. Feet.	
Sandstone, **Homewood**, and shales	100	100	
Coal, Stockton-Lewiston	8	108	
Shale and concealed	182	290	
Shale, sandy, **Winifrede Coal horizon**	5	295	295′
Sandstone and concealed	105	460	
Shale, green	3	463	
Limestone, impure	2	465	
Sandstone and concealed	70	535	
Shale, sandy	10	545	
Concealed	150	695	
Sandy shale and concealed	54	749	
Limestone, Dingess, marine fossils	1	750	455′
Shale, gray, sandy	5	755	
Sandstone and concealed	50	805	
Sandstone	22	827	
Shale, gray	3	830	
Limestone, dark, marine fossils, Seth	1	831	81′
Shale, gray, iron ore nodules	2.8	833.8	
Coal, splint 0.2′ / Sandstone 1.5 / **Coal**, splint 1.5 — **Cedar Grove**	3.2	837	
Sandstone and concealed	73	910	
Shale, gray	10	920	
Coal, Campbell Creek (No. 2 Gas)	5	925	88′
Sandstone, massive, **Brownstown**	70	995	
Sandstone and concealed	115	1110	
Coal, Eagle	5	1115	190′
Sandstone and concealed to Big Branch, elevation, 1060′ B	135	1250	

The foregoing interesting section gives the **Seth** and the **Dingess Limestones**, both of which are full of marine fossils at this point.

Near Colcord the following aneroid section was measured by Krebs, descending the divide between Long Branch of Cabin Creek and Dow Fork of Long Branch of Clear Fork of Coal River, along path running down Dow Fork to mouth of Long Branch of Clear Fork, 1.5 miles east of Colcord P. O.:

Section 1.5 Miles East of Colcord P. O., Clear Fork District.

	Thickness.	Total.	
Kanawha Group (1320′)	Feet.	Feet.	
Sandy shale and sandstone	180	180	
Coal, Winifrede	6	186	186′
Shale, sandy	2	188	
Sandy shale and concealed	562	750	
Coal, Campbell Creek (No. 2 Gas)	12	762	576′
Sandstone and concealed	140	902	
Coal, Eagle	3	905	143′
Shale, sandy	2	907	
Sandstone, massive	18	925	
Sandy shale and concealed	25	950	
Coal, Little Eagle	2	952	
Shale, sandy	23	975	
Sandstone, massive	100	1075	
Sandy shale and concealed	21	1096	
Shale, dark, **Eagle?**	2	1098	
Coal, Little Cedar	2	1100	195′
Shale, sandy	1	1101	
Sandstone	14	1115	
Sandy shale and concealed	20	1135	
Shale, gray	3	1138	
Coal, Lower War Eagle	2.2	1140.2	40.2′
Slate	1.8	1142	
Shale, dark	20	1162	
Sandstone and concealed	100	1262	
Sandstone, massive, **Lower Gilbert**, to mouth of Long Branch, elevation, 1073′ L	58	1320	

The foregoing section was taken to the rise so that these intervals given are too small.

The following aneroid section was obtained by Teets in the northwestern portion of Marsh Fork District, descending from a high point near the Boone-Raleigh County Line, northwestward down a steep hillside to the mouth of Lower Big Branch:

Section 1.3 Miles Northwest of Hecla, Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Allegheny Series (125′)			
Sandstone and sandy shale	125	125	
Kanawha Group (1190′)			
Sandstone, **Homewood**, massive	80	205	
Shale, sandy	20	225	
Sandstone, **Coalburg**, massive	100	325	
Sandy shale and concealed	50	375	
Sandstone, **Upper Winifrede**, massive	45	420	
Coal, Winifrede	5	425	425′
Sandstone, sandy shale, and concealed	290	715	
Coal, Williamson?	3	718	293′
Sandy shale and concealed	269	987	
Coal blossom, Campbell Creek (No. 2 Gas)	3	990	272′
Sandy shale and concealed	110	1100	
Coal blossom, Matewan	2	1102	112′
Sandstone, **Eagle**, massive	73	1175	
Coal, Eagle	4	1179	77′
Sandy shale and sandstone to bed of Marsh Fork, elevation, 895′ B	136	1315	

Another aneroid section was measured by Teets, descending from a summit in the Boone-Raleigh County Line, eastward along trail to Hazy Creek, one mile west of Launa, as follows:

Section One Mile West of Launa, Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (1130′)			
Sandstone and sandy shale	71	71	
Coal, Coalburg	4	75	75′
Sandstone and concealed	75	150	
Coal, Winifrede	5	155	80′
Sandstone and concealed	575	730	
Coal, Campbell Creek (No. 2 Gas)	5	735	580′
Sandstone and concealed	155	890	
Sandstone, **Eagle**	15	905	
Coal, gas 0′ 9″ Slate and niggerhead 0 3 **Coal**, gas, glossy 1 10 **Coal**, harder 1 8	**Eagle** 4 5	909.5	174.5′
Sandstone and concealed to Hazy Creek, elevation, 1015′ B	220.5	1130	

The following aneroid section was measured by Teets from a summit, 2.4 miles southwest of Launa, descending along a steep ravine, almost due east to Hazy Creek of Marsh Fork:

Section 2.4 Miles Southwest of Launa, Marsh Fork District.

	Thickness. Feet.	Total. Feet.	
Allegheny Series (240′)			
Sandstone and concealed	95	95	
Coal, Upper Kittanning, fallen shut, reported	5	100	100′
Concealed	15	115	
Sandstone	15	130	
Slate, gray	4	134	
Coal, block, Middle Kittanning	4-1″	138-1″	38-1″
Sandstone and concealed	52-11″	191	
Coal, Lower Kittanning (No. 5 Block), fallen shut, reported 9 feet of coal and slate	9	200	61′ 11″
Sandstone and sandy shale	25	225	
Concealed, bench	15	240	
Kanawha Group (1040′)			
Sandstone, **Homewood,** and sandy shale	135	375	
Concealed, bench	10	385	
Sandy shale and concealed	150	535	
Shale, slaty	3	538	
Coal blossom, Winifrede	2	540	340′
Sandstone, massive	70	610	
Shale, sandy	20	630	
Sandstone, massive	98	728	
Coal, Hernshaw, impure	2	730	190′
Shale, slaty	2	732	
Sandstone, **Upper Cedar Grove,** massive	165	897	
Coal blossom, Cedar Grove	3	900	170′
Sandstone, **Middle Cedar Grove,** massive	52	952	
Coal blossom, Lower Cedar Grove	3	955	55′
Sandstone, **Lower Cedar Grove**	35	990	
Slate	2	992	
Coal blossom, Alma	3	995	40′
Sandy shale and sandstone	73	1068	
Slate	7	1075	
Coal 0′ 2″			
Slate, gray 0 2			
Coal 0 5			
Slate, dark 1 4 — **Campbell Creek (No. 2 Gas)**	4-3″	1079-3″	84′ 3″
Coal 0 2			
Slate 1 2			
Coal 0 10			
Slate	1-9″	1081	
Sandstone and concealed	190	1271	
Coal, Eagle, fallen shut, reported (elevation, 1440′ B.)	4	1275	195′ 9″
Sandstone and concealed to Hazy Creek	5	1280	

The foregoing interesting section gives ten different coal horizons.

Another aneroid section was measured by Teets, from a summit in ridge 2 miles southwest of Citie, descending eastward along a trail to the head of Canterbury Branch of Drews Creek, as follows:

Section 2 Miles Southwest of Citie, Marsh Fork District.

Kanawha Group (800′)	Thickness. Feet.	Total. Feet.	
Sandstone and sandy shale to low gap	110	110	
Sandy shale and concealed	90	200	
Concealed, bench	10	210	
Sandy shale and concealed	50	260	
Sandstone	50	310	
Sandy shale and concealed	75	385	
Sandy shale	50	435	
Sandstone	30	465	
Sandy shale and concealed	35	500	
Sandstone, visible	10	510	
Coal, gas 1″ 7″ / Slate, gray 0 4 / Coal, visible 0 10 — Campbell Creek (No. 2 Gas) Upper Bench	2-9″	512-9″	512′ 9″
Sandy shale and concealed	32-3″	545	
Slate	2	547	
Coal, Campbell Creek (No. 2 Gas), Lower Bench, gas	3-7″	550-7″	37′ 10″
Slate, visible	1-5″	552	
Sandstone and concealed	95-4″	647-4″	
Coal, Matewan	2-8″	650	99′ 5″
Concealed and shale	95	745	
Coal 0′ 0¾″ / Slate, gray 0 0¾ / Coal 0 7 / Slate 0 2½ / Coal 2 1 / Slate, gray 0 5 / Coal, gas 1 10 — Eagle	5-3″	750-3″	100′ 3″
Slate	0-9″	751	
Concealed, elevation, 1900′ B.	49	800	

Another aneroid section was measured by Krebs, descending from a summit one mile north of Artie P. O., southward to Clear Fork, ½ mile west of Artie P. O., as follows:

Section ½ Mile West of Artie P. O., Clear Fork District.

Kanawha Group (920′)	Thickness. Feet.	Total. Feet.
Sandy shale, sandstone and concealed	500	500
Sandstone, massive	20	520
Sandy shale and concealed	10	530
Shale, gray	1	531
Coal, gas 1′ 0″ / Shale, gray 2 6 / Coal, gas 4 10 — Eagle (8′ 4″)	8.3	539.3
Shale, gray	1.7	541
Sandy shale and concealed	10	551
Shale, dark, limy	20	553
Sandy shale and concealed	42	595

	Thickness. Feet.	Total. Feet.
Sandstone, massive	35	630
Shale, sandy	15	645
Bench	5	650
Sandstone, massive	45	695
Shale, sandy and concealed	5	700
Bench	5	705
Sandy shale and concealed	25	730
Shale, dark	2	732
Shale and sandstone	58	790
Shale, dark, limy	5	795
Shale and concealed	45	840
Bench	5	845
Shale, sandy	5	850
Sandstone, massive, buff	45	895
Shale and fire clay, buff	2	897
Sandstone, massive, to Clear Fork	23	920

The following aneroid section was obtained by Teets, from a summit at the eastern end of Chestnut Flat Mountain, at the common corner of Trap Hill, Clear Fork and Town Districts, descending northwestward along county road, in Clear Fork District, to head of Sandlick Branch of Sandlick Creek:

Section 1.7 Miles Northwest of Harper, Trap Hill District.

Kanawha Group (245′)	Thickness. Feet.	Total. Feet.	
Sandy shale and sandstone	42	42	
Coal, Lower War Eagle	3	45	
Shale, slaty	15	60	
Coal blossom	1	61	61′
Shale, sandy	9	70	
Coal blossom	1	71	10′
Shale, slaty	10	81	
Sandy shale and sandstone	29	110	
Shale, sandy	35	145	
Sandstone, massive, friable, micaceous	20	165	
Shale, slaty, gray	20	185	
Shale, sandy, yellow	35	220	
Fire clay	3	223	
Shale, gray	17	240	
Coal blossom, Gilbert	2	242	
Shale, gray, slaty	3	245	

		Thickness. Feet.	Total. Feet.
New River Group (235')			
Shale, sandy, yellowish.....30'			
Sandstone, massive, medium grained 10			
Shale, sandy and concealed..30			
Sandstone, massive, micaceous 10	Nuttall ..	145	390
Shale, sandy and concealed..20			
Sandstone, massive, micaceous, medium grained, buff colored.....45			
Shale, gray, sandy.....		55	445
Sandstone and concealed.....		10	455
Sandy shale and concealed to Sandlick Branch, elevation 1985' B.....		25	480

The following aneroid section was measured by Teets, from a low gap in the Raleigh-Fayette County Line, in the eastern portion of Clear Fork District, westward along county road to head of Toney Fork of Clear Fork:

Section 2 Miles Almost West of Herberton, Clear Fork District.

	Thickness. Feet.	Total. Feet.
Kanawha Group (310')		
Shale, sandy	20	20
Sandstone, massive	30	50
Shale, sandy, and sandstone.....	50	100
Sandstone	50	150
Shale, sandy	25	175
Sandstone	25	200
Shale, sandy, and sandstone.....	20	220
Slate, dark	5	225
Shale, sandy, and concealed.....	2	227
Coal blossom, Little Cedar?.....	3	230
Shale, slaty	10	240
Sandstone, massive	30	270
Shale, sandy, and concealed.....	17	287
Coal, Lower War Eagle? (above creek), reported	3	290
Sandy shale and concealed, elevation, 2065' B.	20	310

The following aneroid section was measured by Teets, from a low gap in the Raleigh-Fayette County Line, at the head of Toney Fork, eastward along county road to head of Willis Branch of Paint Creek in the southwest corner of Fayetteville District of Fayette County, and combined with Plum Orchard Core Test Hole No. 3 (190):

Section 1.1 Miles Northwest of Herberton, Fayetteville District, Fayette County.

	Thickness.		Total.		
Kanawha Group (340′)	Ft.	In.	Ft.	In.	
Sandy shale and concealed	20	0	20	0	
Sandstone, massive	25	0	45	0	
Shale, sandy, and concealed	55	0	100	0	
Sandstone, massive	20	0	120	0	
Shale, gray, sandy	30	0	150	0	
Sandstone, massive	20	0	170	0	
Shale, sandy, and concealed	145	0	315	0	
Sandstone, massive, coarse grained friable	15	0	330	0	
Shale, sandy	7	0	337	0	
Coal blossom, Gilbert	3	0	340	0	340′
New River Group (335′)					
Shale, sandy	30	0	370	0	
Sandstone, massive	20	0	390	0	
Shale, sandy, and concealed	70	0	460	0	
Sandstone, massive, micaceous, friable, coarse grained	50	0	510	0	
Shale, sandy	3	0	513	0	
Shale, dark, slaty	7	0	520	0	
Sandstone, friable, coarse grained	10	0	530	0	
Shale, sandy	7	0	537	0	
Fire clay. **Lower Douglas Coal horizon**	3	0	540	0	
Sandstone, massive, **Panther**	60	0	600	0	
Shale, slaty, gray	40	0	640	0	
Shale, sandy	45	0	685	0	
Sandstone, massive	24	0	709	0	
Coal, laeger "B"?	1	0	710	0	370′
Sandstone and concealed to top of boring (190)	20	0	730	0	
Soil and boulders, elevation, 1699′ B.	6	6	736	6	
Sandstone, **Upper laeger**	72	6	809	0	
Shale	1	2	810	2	
Sandstone	16	10	827	0	
Sandstone and shale	37	6	864	6	
Sandstone, dark 2′ 10″ Sandstone, light 1 8	4	6	869	0	
Sandstone and shale	26	0	895	0	
Sandstone, brown	1	6	896	6	
Shale	14	0	910	6	
Sandstone and shale	12	0	922	6	
Sandstone	53	0	975	6	
Shale	4	6	980	0	
Sandstone and shale	5	8	985	8	
Sandstone	5	6	991	2	
Shale, black	8	10	1000	0	
Coal, Lower laeger	0	5½	1000	5½	
Shale	4	6½	1005	0	
Sandstone	48	11	1053	11	
Shale, dark	17	6	1071	5	
Sandstone	3	6	1074	11	
Sandstone and shale	20	1	1095	0	

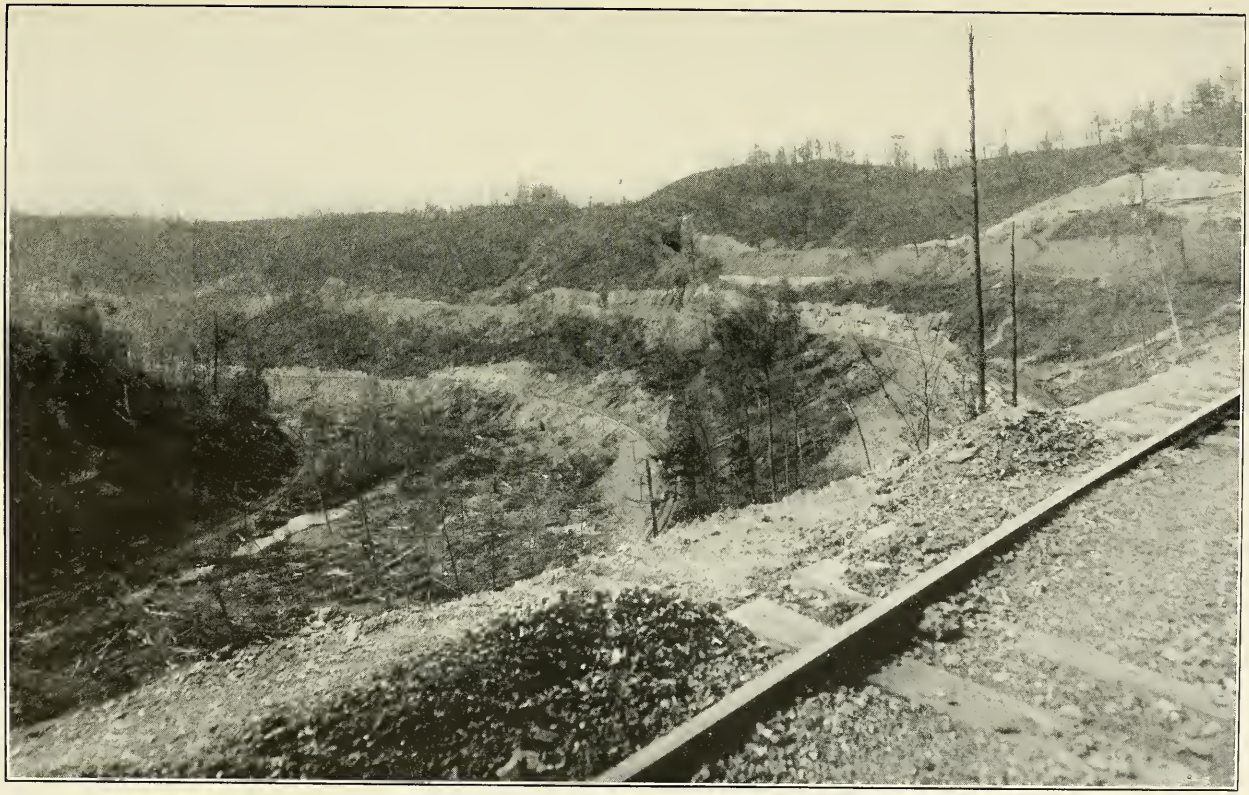

PLATE VI.—View looking east on Winding Gulf, showing the Horseshoe Bend and tunnel in New River Group.

	Thickness. Ft.	In.	Total. Ft.	In.
Shale, dark	23	6	1118	6
Coal, Sewell "Rider"	0	8	1119	2
Shale, dark	16	4	1135	6
Coal, impure, Sewell	3	8	1139	2
Shale, dark	1	10	1141	0
Sandstone	34	0	1175	0

The following aneroid section was obtained by Teets, one mile northwest of Cirtsville Station and Maynor P. O., descending from a summit in a high knob, in the Clear Fork-Town District Line in the northwestern corner of Town District, along a private and county road of Dickson Wren to Dixon Branch:

Section One Mile Northwest of Cirtsville Station, Town District.

Pottsville Series (780')	Thickness. Feet.	Total. Feet.
Kanawha Group (465')		
Sandy shale and concealed	15	15
Sandstone	15	30
Shale, slaty	6	36
Coal, abandoned opening, Eagle	4	40
Sandy shale and concealed	10	50
Bench	5	55
Sandy shale and concealed	70	125
Shale, sandy	50	175
Concealed and sandy shale	5	180
Sandstone, massive, friable, coarse grained, buff colored	35	215
Shale, sandy and concealed	10	225
Sandstone	20	245
Shale, sandy	25	270
Sandstone, massive, micaceous	40	310
Shale, sandy	15	325
Sandstone, massive, medium grained, micaceous, gray	60	385
Shale, sandy	30	415
Sandstone, massive, medium grained	30	445
Shale, sandy	20	465
New River Group (315')		
Sandstone, **Nuttall**, massive, medium grained	5	490
Shale, sandy	10	500
Shale, gray, slaty	5	505
Shale, gray	5	510
Shale, dark, slaty	5	515
Sandstone and sandy shale	15	530
Shale, sandy	3	533
Fire clay, **Douglas "A" Coal horizon**	2	535
Shale, sandy, and concealed	75	610
Sandstone, massive	10	620

	Thickness. Feet.	Total. Feet.
Shale, sandy, and concealed	40	660
Shale, slaty, gray	20	680
Sandstone, massive, ferriferous	10	690
Shale, sandy	50	740
Sandstone, massive, to Dixon Branch, 1820′ B.	40	780

Passing up Paint Creek to Sweeneyburg, an aneroid section was measured by Krebs, descending from a high summit on the dividing ridge between the waters of Clear Fork of Coal River and Paint Creek, southeastward to a branch of Paint Creek, and joined to Diamond Core Test, E. J. Berwind No. 29 (30), 1.7 miles northwest of Sweeneyburg, as follows:

Section One Mile West of Sweeneyburg, Town District.

Pottsville Series (1095.9′)	Thickness. Feet.	Total. Feet.
Kanawha Group (370′)		
Sandy shale and concealed	150	150
Sandstone, massive	40	190
Sandy shale and concealed	20	210
Sandstone	40	250
Shale, sandy	20	270
Sandstone, massive	30	300
Shale, sandy	65	365
Bench	5	370
New River Group (725.9′)		
Sandstone, Nuttall	30	400
Shale, dark gray	10	410
Shale, sandy, yellow	10	420
Shale, sandy	60	480
Sandstone and concealed	200	680
Fire clay	2	682
Sandy shale and concealed	48	730
Fire clay	3	733
Sandy shale and sandstone	17	750
Shale and concealed to top of core drill hole No. 29 (30), elevation 1875.85′ L.	25	775
Thence with core test hole:		
Surface	20	795
Sandstone	6	801
Shale, dark	7	808
Sandstone, very hard	14	822
Shale	18	840
Sandstone, very hard	71	911
Shale, dark	17	928
Sandstone, hard	5	933
Slate, black	3	936
Sandstone, hard	9	945
Shale, dark	46	991
Sandstone	0.5	991.5
Shale, dark	1	992.5

	Thickness. Feet.	Total. Feet.	
Sandstone, hard	26.5	1019	
Shale, dark	8	1027	
Sandstone	1	1028	
Slate, black	7	1035	
Coal, Sewell "B"?	0.5	1035.5	
Fire clay	4	1039.5	
Shale with sandstone partings	27	1066.5	
Shale, dark	6.5	1073	
Slate, with coal streaks	1.3	1074.3	
Slate and bony coal, interlaminated	1	1075.3	
Bone and coal, interlaminated ....0′ 3 ″ | Coal ....1 6 } Sewell	6.3	1081.6	46′ 1″
Slate and coal streaks 3 3½ | Coal ....1 3 /			
Slate and fire clay	1.3	1082.9	
Sandstone	0.4	1083.3	
Shale, sandy	2	1085.3	
Shale, dark	9.7	1095	
Shale, light, to bottom	0.9	1095.9	

Another section, measured by Krebs, descending from a summit between Sandlick Creek and Paint Creek, northeastward along road and joined to E. J. Berwind Well No. 27 (33), one mile west from Sweeneyburg, Town District, gives the following:

Section One Mile Southwest from Sweeneyburg P. O., Town District.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (231′)			
Sandy shale and concealed	140	140	
Coal, Gilbert	1	141	141′
Shale, dark and concealed	5	146	
Shale, sandy	5	151	
Sandstone, grayish	20	171	
Shale, sandy	60	231	
New River Group (475′ 11″)			
Sandstone, **Nuttall**	80	311	
Sandy and concealed to top of E. J. Berwind, Diamond Core Test (33), elevation, 1914.39′ L	49	360	
Thence continuing with core test hole:			
Surface	15	375	
Sandstone	19	394	
Shale	2	396	
Sandstone	1	397	
Shale, dark	6	403	
Sandstone	1	404	
Shale, dark, **Sandy Huff**	60	464	
Sandstone, very hard, **Guyandot**	42	506	
Shale, dark	103	609	

	Thickness. Feet.	Total. Feet.	
Sandstone, very hard	27	636	
Slate, black	15-2"	651-2"	
Coal 1' 6" / Slate 0 4 / Coal 0 5 — Sewell "A"	2-3"	653-5"	512' 5"
Fire clay	4	657-5"	
Shale, sandy	15-7"	673	
Sandstone	7-10"	680-10"	
Coal, Sewell	1-2"	682	
Fire clay	6	688	34' 5"
Sandstone	18-11"	706-11"	

The following section was obtained in the northeast corner of Trap Hill District, on the head of Millers Camp Branch of Marsh Fork, 0.3 mile south of Harper, by combining an aneroid section, measured by Teets, from a summit in the Trap Hill-Town District Line, southward along county road, with the record of the New River Colleries Company Diamond Drill Boring No. 12 well (94), the record of which was published on pages 73-74 of Volume II(A) of the State Survey Reports:

Harper Section, Trap Hill District.

New River Group (825' 5")	Thickness. Ft.	In.	Total. Ft.	In.	
Concealed	15	0	15	0	
Coal blossom, Douglas "A"	1	0	16	0	16' 0"
Shale, sandy	4	0	20	0	
Sandstone, massive, medium grained.	15	0	35	0	
Shale, slaty	5	0	40	0	
Slate, dark	1	0	41	0	
Sandy shale and fire clay	4	0	45	0	
Sandstone, massive, friable, micaceous	15	0	60	0	
Coal blossom, Douglas	2	0	62	0	46' 0"
Shale, sandy	13	0	75	0	
Slaty shale, ferriferous	10	0	85	0	
Shale, gray, sandy	10	0	95	0	
Coal, Lower Douglas	1	0	96	0	34' 0"
Fire clay and shale, gray	4	0	100	0	
Sandstone, **Panther**, massive, gray buff color, coarse grained, micaceous	30	0	130	0	
Sandstone, massive, very soft, friable	15	0	145	0	
Shale, gray	3	0	148	0	
Shale, yellow	5	0	153	0	
Shale and fire clay	2	0	155	0	
Shale, gray, slaty	10	0	165	0	
Shale, yellow	5	0	170	0	
Shale, gray, slaty	15	0	185	0	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, yellow		5	0	190	0	
Shale, gray		3	0	193	0	
Coal, smutty, laeger "B"		1	0	194	0	98′ 0″
Gray shale and fire clay		3	0	197	0	
Sandstone, massive, coarse grained, pinkish gray color		13	0	210	0	
Shale, yellow		10	0	220	0	
Shale, gray, and fire clay		2	0	222	0	
Sandstone, coarse grained		8	0	230	0	
Shale, gray		10	0	240	0	
Sandstone, massive, medium grained		20	0	260	0	
Concealed to top of boring, elevation, 2114.2′ L		10	0	270	0	
Surface		12	9	282	9	
Limestone?		2	4	285	1	
Sandstone, broken. 9′ 5″						
Sandstone, hard....14 11						
Sandstone and slate 26 8						
Sandstone, hard.... 3 6						
Sandstone and slate 17 0						
Sandstone, broken..10 8	Harvey					
Sandstone, light and hard 34 11	Conglomerate and					
Sandstone, soft.....14 4	Guyandot	154	11	440	0	
Sandstone, light and hard 14 3						
Sandstone, rough... 8 3						
Sandstone, broken. 1 0						
Slate, broken		3	9	443	9	
Sandstone		1	4	445	1	
Slate		9	5	454	6	
Slate, broken		3	10	458	4	
Slate		50	7	508	11	
Coal and bone, Sewell "A"		0	4	509	3	315′ 3″
Sandstone		7	1	516	4	
Slate		35	4	551	8	
Coal .....1′ 4½″						
Slate 2 1½						
Slate, broken.....0 5	Sewell	10	1	561	0	52′ 6″
Bone 0 10						
Coal 5 4						
Bone		0	2	561	11	
Slate		15	5	577	4	
Bone		0	4	577	8	
Coal, Sewell "Split"		1	8	579	4	17′ 7″
Slate		3	0	582	4	
Sandstone and slate		2	2	584	6	
Slate		13	0	597	6	
Bone		0	8	598	2	
Sandstone		0	9	598	11	
Slate		15	10	614	9	
Bone .....0′ 6″						
Bone and **coal**.....1 7	Welch.	4	10	619	7	40′ 3″
Bone and slate, broken.2 9						
Slate		4	6	624	1	

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone ..... 6′ 10″						
Sandstone, broken.... 3 10						
Sandstone 4 10	Upper					
Sandstone, hard, light. 24 11	Raleigh	140	10	764	11	
Sandstone and slate... 8 4						
Conglomerate 18 5						
Sandstone, very hard..73 8						
Slate		0	3	765	2	
Sandstone, very hard.....		0	1	765	3	
Coal .....0′ 3″	Little					
Sandstone 0 2	Raleigh	0	8	765	11	146′ 4″
Coal and bone.....0 3						
Sandstone, Lower Raleigh.....		40	11	806	10	
Coal .....1′ 1½″						
Sulphur 0 0½						
Coal 1 5						
Slate 0 3	Beckley..	10	9	817	7	51′ 8″
Bone and coal....1 3						
Coal 2 2						
Bone 1 0½						
Coal 3 5½						
Bone		2	4	819	11	
Slate		0	1	820	0	
Sandstone		3	9	823	9	
Sandstone to bottom.....		1	8	825	5	

The following aneroid section was obtained 1.7 miles northwest of Eccles by combining an aneroid section, measured by Teets, from a summit of a ridge, northward along county road to the head of Stevens Branch with the log of the New River Collieries Company No. 3 well (92), published on page 61 of Volume II(A) of the State Survey Reports:

Section 1.7 Miles Northwest of Eccles, Trap Hill District.

	Thickness. Ft.	In.	Total. Ft.	In.	
Kanawha Group (45′)					
Shale, sandy.....	25	0	25	0	
Shale, slaty.....	5	0	30	0	
Shale, sandy.....	15	0	45	0	
New River Group (863′ 10″)					
Sandstone, **Nuttall**, fine grained, massive	55	0	100	0	
Shale, sandy.....	5	0	105	0	
Coal blossom, Douglas.....	2	0	107	0	107′ 0″
Sandy shale and concealed.....	3	0	140	0	
Coal blossom, Lower Douglas.....	1	0	141	0	34′ 0″
Shale, slaty.....	4	0	145	0	
Sandstone, massive, friable, buff colored	15	0	160	0	
Shale, slaty.....	3	0	163	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	12	0	175	0	
Shale, gray, slaty	5	0	180	0	
Shale, sandy	5	0	185	0	
Shale, gray, slaty	13	0	198	0	
Shale, sandy	12	0	210	0	
Sandstone, massive, ferriferous, friable	30	0	240	0	
Shale, sandy, and concealed	30	0	270	0	
Coal blossom, Iaeger	1	0	271	0	130′ 0″
Shale, sandy	9	0	280	0	
Shale, gray, slaty	3	0	283	0	
Shale, sandy, and sandstone to top of bore hole (2021′ L.)	37	0	320	0	
Thence with bore hole:					
Surface	9	6	329	6	
Sandstone .....62′ 2″ } Harvey					
Sandstone, hard 51 0 } Conglomerate	113	2	442	8	
Slate	0	9	443	5	
Sandstone	2	0	445	5	
Shale, dark	5	0	450	5	
Sandstone	1	6	451	11	
Shale, dark	7	5	459	4	
Sandstone, **Guyandot**	120	0	579	4	
Shale, dark	27	2	606	6	
Coal .....0′ 8″ }					
Slate, black.....2 3 } Sewell	8	3	614	9	343′ 9″
Coal and slate.....5 4 }					
Slate, dark	6	0	620	9	
Shale, sandy	11	0	631	9	
Shale, dark	7	2	638	11	
Coal, Sewell "Split"	0	8	639	7	24′ 10″
Fire clay	0	8	640	3	
Sandstone, hard.....11′ 2″ }					
Shale, sandy, and clay 5 8 } Welch.	72	1	712	4	
Shale, sandy..... 8 9 }					
Sandstone .....46 6 }					
Shale, dark, sandy	0	8	713	0	
Sandstone, hard....11′ 4″ } Upper					
Shale, sandy..... 5 4 } Raleigh	105	9	818	9	
Sandstone, hard....89 1 }					
Coal .....0′ 1″ } Little					
Slate .....0 1 } Raleigh	0	5	819	2	179′ 7″
Coal, dirty.....0 3 }					
Shale, sandy..... 2′ 5″ }					
Shale, light..... 6 0 }					
Sandstone .....26 6 } Lower					
Shale, sandy..... 2 0 } Raleigh	66	9	885	11	
Sandstone ..... 4 0 }					
Slate ..... 0 8 }					
Sandstone .....25 2 }					
Coal .....0′ 2″ } Beckley					
Sandstone .....2 4 } "Rider"	2	7	888	6	
Coal .....0 1 }					
Sandstone	0	2	888	8	
Shale, dark	11	9	900	5	
Coal, Beckley	4	11	905	4	86′ 2″
Shale, dark, to bottom	3	6	908	10	

An aneroid section by Krebs, descending from a summit southward along road and joined to the Crab Orchard Coal and Land Company's Core Test Hole No. 8 (125) at Surveyor, gives the following:

Section at Surveyor, Trap Hill District.

	Thickness.		Total.		
New River Group (947′ 6″)	Ft.	In.	Ft.	In.	
Shale, sandy	10	0	10	0	
Sandstone	40	0	50	0	
Shale, sandy	60	0	110	0	
Bench	5	0	115	0	
Sandstone, soft	55	0	170	0	
Sandstone	40	0	210	0	
Sandstone and concealed	70	0	280	0	
Sandstone, massive	50	0	330	0	
Coal, Castle	1	0	331	0	331′ 0″
Shale, sandy, dark	9	0	340	0	
Sandstone, massive, **Guyandot**, to top of Crab Orchard Coal & Land Co. Core Test Hole No. 8 (125), elevation, 1913′ L.	50	0	390	0	
Thence with boring:					
Surface	27	0	417	0	
Shale, blue	40	0	457	0	
Sandstone, shale partings	13	0	470	0	
Coal 0′ 4″ Fire clay 0 2 **Coal** 1 0 Fire clay 1 6 Slate 1 6 **Coal** 0 8 — **Sewell "A"**	5	2	475	2	144″ 2″
Fire clay	1	1	476	3	
Shale, blue, sandy	7	0	483	3	
Sandstone, shale partings	3	9	487	0	
Sandstone	33	3	520	3	
Slate, black	2	0	522	6	
Coal, Sewell	1	6	524	0	48′ 10″
Fire clay	4	0	528	0	
Shale, blue	5	0	533	0	
Sandstone	15	0	548	0	
Shale, blue, sandy	25	0	573	0	
Sandstone, shale partings 9′ — **Upper Raleigh**					
Sandstone, very hard 140 — **Raleigh**	149	0	722	0	
Shale	0	6	722	6	
Sandstone, hard, **Lower Raleigh**	20	0	742	6	
Shale, **coal** partings, **Beckley**	0	6	743	0	219′ 0″
Fire clay	1	0	744	0	
Sandstone 159′ Sandstone, conglomerate 12 — **Quinnimont**	171	0	915	0	
Sandstone and shale, hard	27	0	942	0	
Slate, black	4	4	946	4	

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay, **Pocahontas No. 8 Coal horizon**	1	2	947	6	204' 6"
Pocahontas Group (16')					
Shale, **Flattop Mountain**, black and sandy	8	8	956	2	
Sandstone, conglomerate, to bottom...	7	4	963	6	

The following aneroid section was measured by Teets, from a point 0.5 mile southeast of the Dingess School and 1.8 miles northeast of Trap Hill, descending along county road and combining with the New River Collieries Company No. 20 well (93), located just south of the Snuffers School:

Section 2 Miles Northwest of Eccles, Trap Hill District.

Pottsville Series (870')	Thickness.		Total.		
Kanawha Group (321')	Ft.	In.	Ft.	In.	
Sandstone and sandy shale	45	0	45	0	
Concealed	25	0	70	0	
Sandstone, massive, medium coarse grained	30	0	100	0	
Shale, slaty, gray	5	0	105	0	
Sandstone, massive, medium grained..	45	0	150	0	
Shale and fire clay, slaty, gray	5	0	155	0	
Sandy shale and sandstone	65	0	220	0	
Fire clay	3	0	223	0	
Shale, sandy	12	0	235	0	
Sandstone, massive	30	0	265	0	
Shale, sandy	15	0	280	0	
Shale, slaty, ferriferous	5	0	285	0	
Shale, sandy	10	0	295	0	
Sandstone, massive, to boring (93) (2005.4' L.)	25	0	320	0	
Thence with record of well:					
Surface	1	0	321	0	
New River Group (549')					
Sandstone, hard, **Nuttall**	80	0	401	0	
Shale, dark	51	0	452	0	
Sandstone, hard, **Panther**	34	0	486	0	
Sandstone and shale	25	0	511	0	
Slate, dark	7	0	518	0	
Coal, Iaeger	1	3	519	3	
Fire clay	5	0	524	3	
Sandstone	17	7	541	10	
Shale, dark	7	1	548	11	
Sandstone	10	0	558	11	
Shale, sandy, dark	26	10	585	9	
Sandstone, dark	1	10	587	7	
Shale	3	4	590	11	
Sandstone, hard	165	0	755	11	
Shale, dark	54	0	809	11	
Sandstone and shale	11	8	821	7	
Sandstone, hard	24	6	846	1	
Shale, dark, sandy	13	11	860	0	
Sandstone, hard	9	0	869	0	
Shale, dark, to bottom	1	0	870	0	

An aneroid section by Krebs, descending from a summit between waters of Breckenridge and Maple Meadow Creeks, 2.0 miles northwest from Bolt P. O., southwestward along road to Maple Meadow Creek, 2 miles northeast from Bolt P. O., gives the following:

Section 2 Miles Northeast from Bolt P. O., Trap Hill District.

New River Group (325′)	Thickness. Ft.	In.	Total Ft.	In.
Shale, sandy, brownish, containing iron ore nodules	50	0	50	0
Sandstone, brownish, friable, **Nuttall**	50	0	100	0
Shale, brown	30	0	130	0
Fire clay	5	0	135	0
Sandy shale and concealed	40	0	175	0
Sandstone, brownish	35	0	210	0
Shale, dark	2	0	212	0
Coal, Douglas	0	6	212	6
Slate	1	6	214	0
Sandy shale and concealed	36	0	250	0
Sandstone, gray	10	0	260	0
Shale, sandy	5	0	265	0
Coal, Lower Douglas, soft	0	6	265	6
Shale, sandy	4	6	270	0
Sandstone, shale and concealed to Maple Meadow Creek, elevation, 1912′ L	55	0	325	0

A section by Krebs, descending southwest along road from a summit one mile southwest of Lester P. O. to Surveyor Creek, ½ mile south of Lester P. O., and combined with Rock House Fork Coal and Land Company Core Test No. 4 (130), on Skinner Fork, gives the following:

Section ½ Mile South of Lester P. O., Trap Hill District.

New River Group (611′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy shale and concealed	20	0	20	0	
Coal, Iaeger	1	0	21	0	21′ 0″
Shale, sandy	24	0	45	0	
Coal, Lower Iaeger	1	0	46	0	25′ 0″
Shale, sandy and concealed	34	0	80	0	
Shale, sandy and brownish	15	0	95	0	
Sandstone, buffish	15	0	110	0	
Sandy shale and concealed	10	0	120	0	
Sandstone, massive	70	0	190	0	
Shale, sandy	20	0	210	0	
Shale, sandy, dark	20	0	230	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, light gray	15	0	245	0	
Shale, dark	10	0	255	0	
Sandstone	13	0	268	0	
Coal, blossom, Sewell "A"	1	0	269	0	223′ 0″
Shale, dark	10	0	279	0	
Coal, Sewell	2	4	281	4	12′ 4″
Sandy shale and concealed to top of Rock House Fork Coal & Land Co.'s. Diamond Core Test Hole No. 8 (130), elevation, 2049.7′ L.	11	8	293	0	
Thence with boring:					
Surface	14	0	307	0	
Shale, dark	34	0	341	0	
Slate, black	2	0	343	0	
Coal, Welch	0	4	343	4	62′ 0″
Fire clay	1	0	344	4	
Shale, sandy, light	3	8	348	0	
Sandstone, hard	25	0	373	0	
Shale, dark	10	0	383	0	
Sandstone, **Upper Raleigh**, hard	95	0	478	0	
Shale, blue	0	9	478	9	
Shale, sandy, light	5	9	484	6	
Slate, black	1	6	486	0	
Shale, blue	11	0	497	0	
Slate, black	0	4	497	4	
Coal, Little Raleigh	0	8	498	0	154′ 8″
Fire clay	1	0	499	0	
Shale, light	1	6	500	6	
Sandstone, slate partings 11′ 6″ / Sandstone 28 6 — **Lower Raleigh**	40	0	540	6	
Coal, Beckley	1	8	542	2	44′ 2″
Fire clay	0	4	542	6	
Shale, blue	4	6	547	0	
Shale, sandy, blue	12	0	559	0	
Shale, sandy	39	10	598	10	
Slate, blue	5	6	604	4	
Coal and slate, Fire Creek	1	0	605	4	63′ 2″
Fire clay	4	0	609	4	
Shale, dark, sandy, to bottom	1	8	611	0	

A section by Krebs, descending from Acord Ridge, northward along road to Surveyor Creek, and joined to Rock House Fork Coal & Land Co. Diamond Core Test Hole No. 3A (132), one mile south of Lester P. O., gives the following:

Section 1 Mile South from Lester P. O., Trap Hill District.

	Thickness. Ft.	In.	Total. Ft.	In.
New River Group (667′ 2″)				
Shale, sandy	2	0	2	0
Sandstone, massive, coarse grained, (Nuttall?)	86	0	88	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay, dark	2	0	90	0	
Sandy shale and sandstone	38	0	128	0	
Shale, dark	2	0	130	0	
Sandstone, dark, brownish	25	0	155	0	
Shale, dark brown	5	0	160	0	
Sandstone, gray	50	0	210	0	
Bench	5	0	215	0	
Sandy shale and concealed	35	0	250	0	
Sandstone	70	0	320	0	
Bench	5	0	325	0	
Shale, sandy	25	0	350	0	
Coal blossom, Sewell	2	0	352	0	352′ 0″
Sandstone, and concealed to top of Rock House Fork Coal & Land Co. Core Test Hole No. 3A (132) elevation, 2051.7′ L	73	0	425	0	
Thence with boring:					
Surface	26	0	451	0	
Sandstone, **Lower Raleigh**, very hard	112	0	563	0	
Shale, blue, sandy	14	0	577	0	
Sand, light	10	8	587	8	
Sandstone	15	3	602	11	
Coal, Beckley	3	0	605	11	252′ 11″
Slate and bone	1	0	606	11	
Shale, blue, sandy	1	0	607	11	
Sandstone, shale partings	8	1	616	0	
Sandstone, very hard	5	0	621	0	
Shale, blue, sandy	10	0	631	0	
Sandstone, shale partings	28	4	659	4	
Shale, blue	2	0	661	4	
Slate, black	0	4	661	8	
Coal, Fire Creek	4	2	665	10	59′ 11″
Bone	0	2	666	0	
Fire clay	0	3	666	3	
Sandstone, coal and shale partings to bottom	0	11	667	2	

An aneroid section by Krebs, descending from a summit ¾ mile northeast from Glen White, southwestward to Glen White, and joined to Rock House Fork Diamond Core Test Hole No. 3 (63), at Glen White, gives the following:

Section at Glen White P. O., Town District.

New River Group (810′ 1″)	Thickness. Ft.	In.	Total. Ft.	In.
Sandy shale and sandstone	40	0	40	0
Shale, sandy, brownish	25	0	65	0
Sandstone, shelly	15	0	80	0
Sandy shale and sandstone	20	0	100	0
Sandstone, brownish red	22	0	122	0
Fire clay, dark	3	0	125	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	23	0	148	0	
Fire clay	2	0	150	0	
Shale, sandy	20	0	170	0	
Sandstone, massive, **Guyandot**	80	0	250	0	
Sandy shale and concealed to top of Diamond Core Test Hole No. 3 (63), elevation, 2165.6′ L.	75	0	325	0	325′ 0″
Thence with core test hole:					
Surface	28	9	353	9	
Sandstone	0	7	354	4	
Sandstone, slate partings	7	3	361	7	
Shale, blue, sandy	0	3	361	10	
Coal, Sewell	2	8	364	6	39′ 6″
Fire clay	5	0	369	6	
Shale, blue	4	6	374	0	
Sandstone, shale partings	23	0	397	0	
Shale, blue, sandy	22	6	419	6	
Shale, blue	2	0	421	6	
Sandstone, very hard	1	6	423	0	
Slate, black	0	6	423	6	
Sandstone, very hard	34	0	457	6	
Shale with sandstone partings	30	6	488	0	
Shale, blue	40	6	528	6	
Coal, Little Raleigh "Rider"	0	4	528	10	164′ 4″
Fire clay	2	6	531	4	
Shale, black, sandy	3	8	535	0	
Coal ....4′ 6″ **Coal,** shaly...1 2 Slate with coal partings....0 7 Slate, black...0 4 Fire clay.....2 0 **Coal** .....0 6 — **Little Raleigh**	9	1	544	1	15′ 3″
Fire clay	6	0	550	1	
Slate, black	1	5	551	6	
Coal, Little Raleigh "Split"	0	8	552	2	8′ 1″
Fire clay	1	10	554	0	
Slate, black	5	9	559	9	
Sandstone, **Lower Raleigh**	39	3	599	0	
Shale, dark, sandy	6	1	605	1	
Slate	7	6	612	7	
Coal, Beckley	9	2	621	9	69′ 7″
Fire clay	2	4	624	1	
Sandstone, very hard	4	10	628	11	
Shale, dark, sandy	50	3	679	2	
Sandstone, very hard	8	2	687	4	
Sandstone	10	2	697	6	
Slate, black	1	7	699	1	
Coal, Fire Creek "Rider"	0	11	700	0	78′ 3″
Fire clay	0	10	700	10	
Shale, blue, sandy	20	3	721	1	
Slate	3	10	724	11	
Coal .....0′ 11″ Slate, black....1 8 **Coal** .....1 7 — **Fire Creek**	4	2	729	1	29′ 1″

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay	6	8	735	9	
Shale, blue	5	4	741	1	
Sandstone, very hard	7	9	748	10	
Shale, blue, sandy	8	2	757	0	
Shale, light, sandy	1	0	758	0	
Slate, sandstone partings	2	7	760	7	
Shale, blue	2	0	762	7	
Slate, black	0	1	762	8	
Coal, No. 9 Pocahontas	0	4	763	0	33′ 11″
Fire clay	2	10	765	10	
Shale, dark, slaty	4	3	770	1	
Shale, blue	16	4	786	5	
Shale, sandstone partings	19	4	805	9	
Slate, sandy	3	2	808	11	
Coal, No. 8 Pocahontas	1	2	810	1	47′ 1″
Pocahontas Group (214′ 11″)					
Fire clay	4	6	814	7	
Shale, dark, sandy	3	2	817	9	
Slate, sandstone partings	28	5	846	2	
Shale, dark, sandy	5	4	851	6	
Shale, blue	12	2	863	8	
Coal 1′ 11″ / Fire clay 0, 6 / **Coal** 1 2 — **No. 7 Pocahontas**	3	7	867	3	57′ 2″
Fire clay	0	9	868	0	
Sandstone	1	5	869	5	
Slate, black	7	1	876	6	
Shale, blue	1	8	878	2	
Slate, black	8	4	886	6	
Coal, No. 6 "A" Pocahontas	0	4	886	10	19′ 7″
Fire clay	3	9	890	7	
Shale, light	4	8	895	3	
Sandstone, fine, white	14	5	909	8	
Shale, sandstone partings	13	2	922	10	
Slate, black	4	6	927	4	
Coal, No. 6 Pocahontas	0	2	927	6	40′ 8″
Bone	0	4	927	10	
Fire clay	4	8	932	6	
Shale, dark	3	3	935	9	
Sandstone, very hard, Eckman	30	0	965	9	
Coal, No. 4 Pocahontas	3	4	969	1	41′ 7″
Fire clay	2	1	971	2	
Shale, blue	12	5	983	7	
Coal, No. 3 Pocahontas "Rider"	1	8	985	3	16′ 2″
Fire clay	3	2	988	5	
Sandstone	6	8	995	1	
Shale, blue	4	0	999	1	
Coal, No. 3 Pocahontas	2	1	1001	2	15′ 11″
Fire clay	4	8	1005	10	
Shale, white	8	6	1014	4	
Sandstone to bottom	10	8	1025	0	

The foregoing section begins near the top of the New River Group and extends through the Pocahontas No. 3 Coal.

The interval between the Sewell and No. 3 Pocahontas Coals at this point is 636′ 8″. The interval between the Sewell and Beckley Coals is 257′ 3″. It will be noted that the latter seam of coal is 9′ 2″ thick, and the excessive thickness of this seam at this point may be due to the fact that the Fire Creek and Beckley Coals are both in the same bed, the usual rock partings having thinned entirely away, as Mr. Hennen believes, but Dr. White thinks identifications given in the section the more probable. Passing to the west from this point, in the Glen White Mine, a parting soon comes into the seam of coal and thickens rapidly, so that the parting becomes 29′ 10″ in Rock House Fork Core Test Hole No. 1 (129), 0.2 mile southeast from Lester.

An aneroid section by Krebs, descending from a summit between Stevens and Millers Camp Branch of Marsh Fork, northwestward to Dingess Branch and joined to Crock Mankin Core Test Hole No. 1 (87), and well No. 1 (135), drilled by the Raleigh Oil and Gas Company, 2 miles northeast of Trap Hill P. O., gives the following succession:

Section 2 Miles Northeast of Trap Hill P. O., Trap Hill District.

	Thickness.		Total.	
Pottsville Series (1350′)	Ft.	In.	Ft.	In.
Sandy shale and concealed	15	0	15	0
Sandstone, friable	40	0	55	0
Sandy shale	49	0	104	0
Fire clay	1	0	105	0
Sandy shale	15	0	120	0
Sandstone, brownish, friable	50	0	170	0
Sandy shale	7	0	177	0
Shale, gray	6	0	183	0
Coal, soft, Douglas	2	0	185	0
Fire clay	2	0	187	0
Shale, sandy	30	0	217	0
Shale, gray	3	0	220	0
Coal, Lower Douglas	0	6	220	6
Slate	0	2	220	8
Sandstone, hard, limy	4	4	225	0
Shale, gray	5	0	230	0
Sandstone	30	0	260	0
Sandy shale and concealed	35	0	295	0
Sandy shale and concealed to top of well	45	0	340	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Thence with Core Drill Hole No. 87, elevation, 1925′ B.:					
Surface	8	0	348	0	
Sandstone, black.....10′ / Sandstone, white.....50	60	0	408	0	
Sandstone and shale	23	0	431	0	
Sandstone, white	5	6	436	6	
Shale	0	6	437	0	
Sandstone	68	0	505	0	
Sandstone and coal	27	0	532	0	
Sandstone, white	3	0	535	0	
Sandstone and shale	1	0	536	0	
Sandstone and coal	11	0	547	0	
Sandstone, black	102	0	649	0	
Coal, Sewell	1	6	650	6	
Fire clay	2	6	653	0	
Sandstone, **Welch**	33	0	686	0	
Sandstone and shale	21	0	707	0	
Sandstone, **Upper and Lower Raleigh**	168	10	875	10	
Shale	1	0	876	10	
Sandstone and slate	15	0	891	10	
Sandstone and shale	14	0	905	10	
Coal, Beckley	4	7	910	5	259′ 11″
Sandstone and shale to bottom of Diamond Core Test Hole	6	5	916	10	
Thence with boring for oil (135):					
Sandstone and shale	7	2	924	0	
Coal, Fire Creek (Beckley "Split," I. C. W.)	2	0	926	0	15′ 7″
Sandstone, brown.....22′ / Sandstone, black..... 5	27	0	953	0	
Slate	53	0	1006	0	
Sandstone, gray, streaks of black	24	0	1030	0	
Pocahontas Group (320′)					
Sandstone, white....67′ / Sandstone, black....34 — **Flattop and Pierpont**	101	0	1131	0	
Slate	7	0	1138	0	
Coal, No. 6 Pocahontas	5	0	1143	0	217′ 0″
Sandstone, gray	90	0	1233	0	
Slate	10	0	1243	0	
Coal, No. 3 Pocahontas	7	0	1250	0	107′ 0″
Sandstone, dark..19′ / Sandstone, gray..35 / Sandstone, dark..12 — **Lower Pocahontas**	66	0	1316	0	
Sandstone, gray, limy	34	0	1350	0	
Mississippian (2493′)					
Mauch Chunk and Greenbrier (2493′)					
Red shale	64	0	1414	0	
Sandstone, gray	25	0	1439	0	
Big red	48	0	1487	0	
Slate	70	0	1557	0	
Sandstone	5	0	1562	0	
Shale, black	70	0	1632	0	
Sandstone and lime	130	0	1762	0	
Sandstone, white	8	0	1770	0	

	Thickness. Ft.	In.	Total. Ft.	In.
Red rock	150	0	1920	0
Sandstone and lime	30	0	1950	0
Sandstone and shale	30	0	1980	0
Sandstone, shells and slate	33	0	2013	0
Slate and shells	50	0	2063	0
Rock, pink, and shells	115	0	2178	0
Red rock and shells	50	0	2228	0
Slate	20	0	2248	0
Pink rock and shells	30	0	2278	0
Sandstone, shells and shale	45	0	2323	0
Slate and shells	20	0	2343	0
Rock, pink	15	0	2358	0
Sandy shale and slate	40	0	2398	0
Limestone, pink and shells	19	0	2417	0
Shale, black	50	0	2467	0
Limestone	11	0	2478	0
Slate	20	0	2498	0
Limestone	15	0	2513	0
Shale	15	0	2528	0
Unrecorded to bottom	1315	0	3843	0

The well probably ended in the Big Injun Sand.

An aneroid section by Krebs, descending from a summit between Whitestick and Craborchard Creeks, southwest along road to the latter creek, ½ mile northeast of Crab Orchard P. O., gives the following:

Section ½ Mile Northeast of Crab Orchard P. O., Town District.

New River Group (225′)	Thickness. Feet.	Total. Feet.
Sandy shale	10	10
Sandstone	40	50
Fire clay, dark gray	2	52
Shale, sandy	23	75
Sandstone, brownish, friable, **Guyandot**	25	100
Sandy shale and concealed	36	136
Coal blossom, Sewell "Rider"	1	137
Shale, dark	10	147
Coal, Sewell	3	150
Shale, dark	2	152
Shale, sandy	48	200
Sandstone, **Upper Raleigh**	20	220
Shale and sand to Craborchard Creek, (2275′ B.)	5	225

An aneroid section by Krebs, descending from the ridge along the road northeast to Mabscott Station, gives the following:

Section at Mabscott Station, Town District.

New River Group (215′)	Thickness. Feet.	Total. Feet.
Sandy shale and concealed	135	135
Coal, Sewell	4	139
Shale, dark	1	140
Shale, sandy	10	150
Sandstone, flaggy	15	165
Shale, sandy	28	193
Shale, dark	2	195
Sandstone and concealed to Whitestick Creek (2290′ B.)	20	215

An aneroid section was measured by Krebs, descending from a high summit, 1.5 miles northwest from Cabell Station, southward to Little Whitestick Creek, 1.5 miles northeast from Cabell Station, as follows:

Section 1 Mile Northeast from Cabell Station, Town District.

Pottsville Series (604′)	Thickness. Ft.	In.	Total. Ft.	In.
Shale, sandy	13	0	13	0
Sandstone, friable, coarse	50	0	63	0
Shale, sandy, full of iron ore nodules	18	0	81	0
Fire clay	2	0	83	0
Shale, sandy, iron ore nodules	35	0	118	0
Sandstone, micaceous	25	0	143	0
Shale, sandy, full of iron ore nodules	20	0	163	0
Coal, soft, laeger "A"	1	1	164	1
Sandy shale	1	11	166	0
Sandstone, friable	27	0	193	0
Coal, soft, laeger	0	8	193	8
Fire clay	1	4	195	0
Sandstone, buff, friable	38	0	233	0
Coal, Lower laeger	0	6	233	6
Fire clay	0	6	234	0
Shale, sandy, to Little Whitestick (2385′ B.)	10	0	244	0
Interval to **Sewell Coal**	360	0	604	0

An aneroid section by Krebs, descending from a high summit 2 miles northwest from Harper, along road, southeastward to Harper, shows the following:

Section at Harper, Trap Hill District.

Pottsville Series (425′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy shale and concealed	5	0	5	0	
Sandstone, friable, **Nuttall**	45	0	50	0	
Fire clay, dark gray	2	0	52	0	
Shale, sandy	22	0	74	0	
Coal, Douglas	0	6	74	6	
Shale, sandy	0	6	75	0	
Sandy shale and concealed	25	0	100	0	
Shale, dark, sandy	5	0	105	0	
Sandstone, hard, coarse	30	0	135	0	
Shale, sandy, iron ore nodules	25	0	160	0	
Sandstone, coarse, **Lower Nuttall**	40	0	200	0	
Fire clay, **Lower Douglas Coal horizon**	2	0	202	0	
Shale, sandy, and concealed	48	0	250	0	
Sandstone, friable, brownish ....40′ / Sandstone, friable, reddish ....10 } **Panther**	50	0	300	0	
Shale, sandy, iron ore nodules	25	0	325	0	
Fire clay	2	0	327	0	
Shale, sandy	13	0	340	0	
Sandstone, whitish gray..20′ / Sandstone, brownish, friable ....40 } **Upper Taeger.**	60	0	400	0	
Sandy shale and concealed to top of The Craborchard Coal & Land Co.'s. Core Test Hole No. 12 (94) elevation, 2114.2′ L	25	0	425	0	

An aneroid section by Krebs, descending from a summit ½ mile north of Nesco P. O., westward to Sims Branch, and joined to E. J. Berwind Diamond Core Test Hole No. 2 (17), exhibits the following:

Section ½ Mile Northwest of Nesco P. O., Town District.

Kanawha and New River Groups (841′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy shale and concealed	125	0	125	0	
Sandstone	15	0	140	0	
Shale, sandy	30	0	170	0	
Shale, dark	5	0	175	0	
Shale, sandy	13	0	188	0	
Shale, dark	2	0	190	0	
Shale, sandy	31	0	221	0	
Coal, Lower Douglas	0	6	221	6	221′ 6″
Fire clay	3	6	225	0	
Shale, dark	5	0	230	0	
Shale, sandy, iron ore nodules	20	0	250	0	
Shale, sandy	45	0	295	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone to top of E. J. Berwind Core Drill Hole No. 2 (17) elevation, 2003.22′ L.	10	0	305	0	
Thence with core test hole:					
Surface	6	0	311	0	
Sandstone	10	0	321	0	
Slate and fire clay	18	0	339	0	
Sandstone, soft	55	0	394	0	
Shale, dark	15	0	409	0	
Slate, dark	32	0	441	0	
Coal, Iaeger	0	1	441	1	219′ 7″
Sandstone, very hard, **Lower Iaeger**	30	0	471	1	
Shale and slate	47	0	518	1	
Sandstone, **Harvey Conglomerate**	67	6	585	7	
Slate, black	17	5	603	0	
Sandstone, hard	2	0	605	0	
Slate, black	57	0	662	0	
Coal, Sewell "B"	0	2	662	2	221′ 1″
Sandstone	31	0	693	2	
Slate, black	25	0	718	2	
Shale, dark	40	6	758	8	
Slate, black	0	4	759	0	
Coal 1′ 2″ / Slate, black 0 5 / **Coal** 0 5 / Slate, black 5 11 / Bone 0 4 / **Coal** 0 10 — **Sewell.**	9	1	768	1	105′ 11″
Fire clay	3	2	771	3	
Shale, sandstone partings	21	0	792	3	
Slate and fire clay	5	0	797	3	
Sandstone	6	9	804	0	
Shale, sandstone partings	3	6	807	6	
Sandstone, very hard, **Upper Raleigh**, to bottom	33	6	841	0	

The following section was obtained by Krebs, descending from a high summit eastward to Cranberry Station:

Section at Cranberry Station, Town District.

	Thickness. Ft	In.	Total. Ft.	In.
New River Group (638′)				
Sandstone, friable	30	0	30	0
Fire clay	5	0	35	0
Sandstone, broken	35	0	70	0
Shale, sandy	30	0	100	0
Shale, dark	20	0	120	0
Sandstone, friable	49	0	169	0
Coal, soft, Iaeger "B"	1	0	170	0
Shale, sandy	8	0	178	0
Coal, Iaeger "A"	2	0	180	0
Shale and concealed to top of Cranberry Shaft, (2395′ B)	10	0	190	0
Interval to **Sewell Coal**	448	0	638	0

The following aneroid section was obtained by Krebs, descending from a high summit 1.4 miles north of Skelton, southward to Skelton:

Skelton Section, Town District.

Pottsville Series (350′)	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	4	0	4	0	
Fire clay	1	0	5	0	
Sandstone, buff	20	0	25	0	
Coal, laeger "A", soft	0	7	25	7	25′ 7″
Sandy shale and concealed	9	5	35	0	
Coal, laeger	0	7	35	7	
Fire clay	0	5	36	0	
Shale, sandy	35	0	71	0	
Shale, dark	5	0	76	0	
Shale, sandy	5	0	81	0	
Shale, dark	5	0	86	0	
Sandstone, buff	22	0	108	0	
Coal and slate, **Lower laeger**	2	0	110	0	84′ 5″
Sandstone, buff, conglomerate	15	0	125	0	
Shale, dark	5	0	130	0	
Shale, sandy, iron ore nodules	10	0	140	0	
Shale, sandy, and sandstone	30	0	170	0	
Interval to **Sewell Coal**	180	0	350	0	240′ 0″

The following aneroid section was obtained by Krebs, descending from a summit along road northward to Raleigh Station:

Section at Raleigh Station, Shady Spring District.

Pottsville Series (540′)	Thickness. Feet.	Total. Feet.	
Shale, sandy	10	10	
Sandstone, massive	30	40	
Fire clay, **Sewell Coal horizon**	2	42	42′
Sandy shale and concealed	28	70	
Sandstone, **Upper Raleigh**, coarse	78	148	
Fire clay, **Little Raleigh Coal horizon**	2	150	
Shale, sandy	30	180	
Sandstone, **Lower Raleigh**, medium coarse, friable	110	290	
Slate	1	291	
Coal, Beckley	4	295	253′
Fire clay	1	296	
Sandy shale and sandstone	74	370	
Sandstone, buff, friable, **Quinnimont**	25	395	
Shale, sandy	9	404	
Fire clay, **Fire Creek Coal horizon**	1	405	110′
Sandy shale and concealed	35	440	
Shale, dark	10	450	

	Thickness. Feet.	Total. Feet.	
Shale, brown	39	489	
Coal, impure, Little Fire Creek	1	490	85′
Shale, dark	5	495	
Sandstone, slate streaks	30	525	
Shale, dark, to Piney Creek, (2100′ B.)	15	540	

An aneroid section by Teets, from a point 0.3 mile south of the Raleigh-Fayette County Line, at the southern end of the Garden Ground Mountain, descending along county road northwestward across the Raleigh-Fayette County Line to Mill Creek, at a point 1.3 miles northwest of Terry, gives the following:

Section 1.3 Miles Northwest of Terry, Fayetteville District, Fayette County.

New River Group (435′)	Thickness. Feet.	Total. Feet.	
Sandstone, massive, friable	20	20	
Shale, sandy and concealed	15	35	
Sandstone	20	55	
Slate and sandy shale	6	61	
Fire clay	4	65	
Shale, sandy	10	75	
Sandstone, **Lower Guyandot**	44	119	
Coal blossom, Sewell	1	120	120′
Shale, sandy, and sandstone	125	245	
Concealed, bench	20	265	
Shale, sandy, and concealed	70	335	
Sandstone	40	375	
Shale, sandy, and concealed, to Mill Creek, (2060′ B.)	60	435	315′

An aneroid section by Teets, from a point just south of the Raleigh-Fayette County Line, and ¾ mile northwest of Terry, descending southeastward along a trail to Terry, gives the following:

Terry Section, Town District.

New River and Pocahontas Groups (1320′)	Thickness. Feet.	Total. Feet.
Shale, sandy	15	15
Sandstone, massive	60	75
Fire clay	4	79
Shale, sandy, and concealed	76	155
Sandstone	30	185
Sandstone and concealed	50	235

	Thickness. Feet.	Total. Feet.	
Concealed, bench	20	255	
Shale, sandy	50	305	
Sandstone, **Lower Raleigh**, massive, friable, coarse grained	90	395	
Coal blossom, Beckley	4	399	399'
Shale, slaty	6	405	
Shale, sandy	10	415	
Sandstone, massive	20	435	
Slate, dark	1	436	
Shale, sandy, and concealed	64	500	
Coal blossom, Fire Creek	2	502	103'
Shale, slaty	3	505	
Sandstone and concealed	220	725	
Concealed, bench	20	745	
Concealed	130	875	
Sandstone and concealed	50	925	
Concealed to bench	30	955	
Sandstone and concealed	70	1025	
Concealed, bench	25	1050	
Sandstone	100	1150	
Concealed, bench	20	1170	
Sandstone and concealed to railroad level (1180' B.)	150	1320	

An aneroid section by Teets, descending from a point ½ mile north of Grandview, northwestward along county road to Terry Junction, just east of McCreery, shows as follows:

Terry Junction Section, Shady Spring District.

New River and Pocahontas Groups (953')	Thickness. Feet.	Total. Feet.	
Shale, sandy, and sandstone	100	100	
Sandstone, **Welch**	50	150	
Shale, sandy, and sandstone	80	230	
Sandstone, **Upper Raleigh**, massive	30	260	
Shale, sandy, and concealed	69	329	
Coal blossom, Beckley	1	330	330'
Shale, sandy, and sandstone	80	410	
Shale, sandy, and bench	25	435	
Shale, slaty, gray	11	446	
Coal, Fire Creek	4	450	
Slate	5	455	125'
Sandstone	40	495	
Shale, sandy, bench	15	510	
Sandstone, **Pineville**	35	545	
Shale, sandy	15	560	
Sandstone, massive, medium grained	40	600	
Sandy shale, bench	30	630	
Sandstone	30	660	
Shale, sandy, bench	30	690	
Sandstone	30	720	
Sandy shale	10	730	

	Thickness. Feet.	Total. Feet.	
Sandstone	30	760	
Shale, sandy, and concealed	25	785	
Shale, sandy, bench	25	810	
Sandstone	30	840	
Shale, sandy	3	843	
Fire clay (No. 3 Pocahontas?)	2	845	
Shale, sandy	5	850	
Sandstone	20	870	
Shale, sandy	10	880	
Sandstone	73	953	498′
Mauch Chunk (332′)			
Shale, red	2	955	
Shale, sandy	25	980	
Shale, red, bench	20	1000	
Shale, sandy, and sandstone	50	1050	
Shale, red, bench	25	1075	
Sandstone, massive, cliff	70	1145	
Shale, red	10	1155	
Shale, red, limy, and concealed (1180′ B.)	130	1285	

An aneroid section obtained by Teets from the Wright Coal Company's Mine No. 2 westward along plane to C. & G. Ry. level, 0.5 mile south of McCreery, gives the following:

Section 0.5 Mile South of McCreery, Shady Spring District.

New River and Pocahontas Groups (530′)	Thickness. Feet.	Total. Feet.	
Concealed	30	30	
Slate, visible	3	33	
Coal blossom, Fire Creek	3	36	36′
Shale and slate	4	40	
Shale, sandy	10	50	
Sandstone and sandy shale	90	140	
Concealed	60	200	
Sandstone, medium grained	90	290	
Concealed	40	330	
Sandstone	40	370	
Concealed	30	400	
Sandstone, fine grained	80	480	
Concealed	20	500	
Sandstone, medium grained	30	530	
Mauch Chunk (315′)			
Sandy shale and concealed	140	670	
Sandstone, medium grained	60	730	
Shale, sandy, and concealed	60	790	
Shale, red	4	794	
Limestone, reddish	1	795	
Shale, red	9	804	
Sandstone, fine grained	3	807	
Shale, red, limy	4	811	
Sandstone, reddish	1	812	

PLATE VII.—View on Piney Creek looking east from Knob Branch, showing the lower portion of Pottsville Series.

	Thickness. Feet.	Total. Feet.
Shale, red, limy	1	813
Limestone, reddish	1	814
Sandstone, fine grained	6	820
Shale, gray	4	824
Sandstone, gray	3	827
Shale, limy, gray	3	830
Concealed (1215′ B.)	15	845

The following aneroid section was measured by Teets from the Wright Coal Company's Mine No. 1, westward along plane, to railroad track, 0.5 mile south of Wright:

Section 0.5 Mile South of Wright, Shady Spring District.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (135′)					
Sandy shale and concealed	18	0	18	0	
Shale, gray	3	0	21	0	
Coal, Fire Creek, good	4	0	25	0	25′ 0″
Slate, visible	2	0	27	0	
Sandstone and sandy shale	58	0	85	0	
Sandy shale and concealed	50	0	135	0	
Pocahontas Group (420′)					
Sandstone	15	0	150	0	
Shale, gray, ferriferous	10	0	160	0	
Slate, dark	5	0	165	0	
Coal, No. 7 Pocahontas	0	9	165	9	140′ 9″
Shale, gray	4	3	170	0	
Sandstone	7	0	177	0	
Shale, gray, slaty	5	0	182	0	
Coal .....0′ 3″ | Slate .....0 0½ } **No. 6 Pocahontas** **Coal** .....0 3½ |	0	7	182	7	16′ 10″
Shale, slaty, gray	3	5	186	0	
Sandstone, massive, ferriferous	6	0	192	0	
Shale, gray, with iron ore nodules	8	0	200	0	
Sandstone, massive, gray	35	0	235	0	
Shale, slaty	10	0	245	0	
Coal .....0′ 6″ | Slate .....0 0½ } **No. 4 Pocahontas** **Coal** .....0 8½ |	1	3	246	3	63′ 3″
Slate, gray	2	9	249	0	
Sandstone, massive, gray	26	0	275	0	
Shale, gray	10	0	285	0	
Shale, slaty	1	0	286	0	
Coal, No. 3 Pocahontas "Rider"	0	6	286	6	40′ 3″
Shale, slaty	1	6	288	0	
Shale, gray	7	0	295	0	
Sandstone, massive	20	0	315	0	
Slate	3	0	318	0	
Coal, No. 3 Pocahontas	0	5	318	5	31′ 11″
Shale, slaty	6	7	325	0	
Sandstone, massive, cliff	65	0	390	0	

	Thickness. Ft.	In.	Total. Ft.	In.
Shale, gray, ferriferous	35	0	425	0
Sandstone, massive, cliff, medium grained	70	0	495	0
Shale, gray, ferriferous	20	0	515	0
Sandstone	40	0	555	0
Mauch Chunk (250′)				
Concealed	85	0	640	0
Sandstone, massive	95	0	735	0
Concealed to creek, elevation, 1245′ B.	70	0	805	0

An aneroid section measured by Teets from a point one mile southeast from Riley, along plane of the Piney Mining Company's Mine No. 4, at Knob Branch, reads as follows:

Knob Branch Section, Town District.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (390′)					
Sandstone, **Upper Raleigh**, massive, medium grained	62	0	62	0	
Coal, Little Raleigh	1	6	63	6	63′ 6″
Slate	6	6	70	0	
Sandy shale and concealed	15	0	85	0	
Sandstone, **Lower Raleigh**, massive	55	0	140	0	
Shale, slaty	15	0	155	0	
Coal 2′ 6″ / Slate 0 3 / **Coal** 2 4 — **Beckley**	5	1	160	1	96′ 7″
Shale, slaty	24	11	185	0	
Sandstone, **Quinnimont**	35	0	220	0	
Shale, sandy and concealed	50	0	270	0	
Sandstone, massive	20	0	290	0	
Shale, sandy	20	0	310	0	
Sandstone, **Pineville**, massive, medium grained	35	0	345	0	
Shale, sandy	19	0	364	0	
Coal blossom, No. 9 Pocahontas	1	0	365	0	
Shale, sandy	5	0	370	0	
Sandstone, massive	10	0	380	0	
Shale, sandy	10	0	390	0	
Pocahontas Group (245′)					
Sandstone, **Flattop Mountain and Pierpont**, massive, medium grained	70	0	460	0	
Shale, sandy, concealed	45	0	505	0	
Concealed	15	0	520	0	
Sandstone, **Eckman and Upper Pocahontas**, massive	80	0	600	0	
Shale, sandy and concealed **(No. 3 Pocahontas Coal horizon)**	5	0	605	0	
Sandstone, to creek, elevation, 1650′ B.	30	0	635	0	

An aneroid section was measured by Teets, from a point just west of Stanaford on Piney Creek, descending eastward to Piney Creek at Stanaford, as follows:

Stanaford Section, Town District.

	Thickness. Ft.	In.	Total. Ft.	In.
New River Group (280′)				
Sandstone and sandy shale	30	0	30	0
Slaty shale	3	0	33	0
Coal 2′ 7″				
Slate, "gray band" 0 3 } Beckley	5	3	38	3
Coal 2 5				
Slate	1	9	40	0
Sandstone and sandy shale	40	0	80	0
Sandstone, **Quinnimont**, massive	40	0	120	0
Concealed	40	0	160	0
Sandstone, **Pineville**, massive	50	0	210	0
Concealed	70	0	280	0
Pocahontas Group (295′)				
Sandstone, **Flattop Mountain and Pierpont**, massive	70	0	350	0
Concealed	20	0	370	0
Sandstone, **Eckman**	60	0	430	0
Concealed	50	0	480	0
Sandstone, **Upper Pocahontas**	40	0	520	0
Concealed	20	0	540	0
Sandstone, **Lower Pocahontas**, to creek, elevation, 1520′ B	35	0	575	0

A hand level section was measured by Teets in a C. & O. Ry. cut, just below Rodes on Piney Creek, 1.6 miles northeast of Raleigh Station, as follows:

Section 1.6 Miles Northeast of Raleigh Station, Town District.

	Thickness. Ft.	In.	Total. Ft.	In.
Pocahontas Group (101′)				
Sandstone, massive, **Eckman**	60	0	60	0
Shale, gray	10	0	70	0
Slate, dark	1	0	71	0
Shale, gray, full of iron nodules	2	0	73	0
Shale, gray, full of plant fossils	4	0	77	0
Coal	0	1	77	1
Shale, gray, plant fossils	8	0	85	1
Coal, soft 2′ 6″				
Shale, gray 0 11				
Coal 0 2 } No. 3				
Shale, gray, slaty 4 0 } **Pocahontas**	9	8	94	9
Coal, soft 2 1				
Shale, gray, to railroad level, (1888′ L.)	6	3	101	0

An aneroid section was measured by Teets from a point just east of Sylvia, eastward along county road to Whorley, on Piney Creek, as follows:

Section 2 Miles East of Beckley, Town District.

New River Group (400′)	Thickness. Feet.	Total. Feet.
Shale, sandy	30	30
Sandstone, gray	30	60
Shale, sandy	30	90
Sandstone, **Lower Raleigh**, massive, gray buff color, medium grained	60	150
Shale, slaty	2	152
Coal, Beckley, visible	2	154
Fire clay	1	155
Shale, sandy, and concealed	25	180
Sandstone, **Quinnimont**, massive	60	240
Shale, slaty, gray	20	260
Shale, sandy	25	285
Sandstone, **Pineville**	65	350
Shale, sandy	10	360
Sandstone	10	370
Shale, slaty, gray	5	375
Shale, gray	5	380
Sandstone, to creek, (1970′ L.)	20	400

An aneroid section measured by Teets from a point just east of Grandview, along trail just north of east to Mill Creek near its mouth, gives the following:

Grandview Section, Shady Spring District.

New River and Pocahontas Groups (800′)	Thickness. Feet.	Total. Feet.	
Sandstone, massive	60	60	
Concealed, bench	20	80	
Sandstone and concealed	110	190	
Coal blossom, Beckley	2	192	
Shale, slaty	8	200	
Sandstone, **Quinnimont**, massive	50	250	
Limestone, hard, gray	1	251	
Sandstone, massive	19	270	
Sandstone and concealed	20	290	
Coal, abandoned opening, Fire Creek	4	294	102′
Sandstone and sandy shale	66	360	
Concealed, bench	20	380	
Concealed	80	460	
Sandstone, massive, **Eckman**	40	500	
Concealed, bench	15	515	
Sandstone, massive, **Upper Pocahontas**	55	570	
Shale, sandy and sandstone	80	650	
Concealed, bench	20	670	
Sandstone and concealed	40	710	
Fire clay	3	713	419′
Sandstone and concealed	57	770	
Sandstone, massive	30	800	

	Thickness. Feet.	Total. Feet.	
Mauch Chunk (450′)			
Sandy shale and sandstone	70	870	
Concealed, bench	30	900	
Concealed	70	970	
Sandstone, massive, lower half full of pebbles, **Princeton**	80	1050	
Shale, gray, limy	35	1085	
Limestone, impure, full of marine fossils	2	1087	
Shale, red	13	1100	
Concealed to bed of Mill Creek, (1200′ B.)	150	1250	

This section was taken to the rise, hence the intervals given are too small.

An aneroid section by Krebs, descending from a summit along road, northwestward to Pemberton, gives the following:

Section at Pemberton, Town District.

	Thickness. Feet.	Total. Feet.	
New River Group (340′).			
Shale, sandy	5	5	
Sandstone, coarse	25	30	
Shale, sandy	18	48	
Fire clay, **Sewell "A" Coal horizon**, dark	2	50	50′
Sandstone, shelly	48	98	
Fire clay, brownish, **Welch Coal horizon**	2	100	50′
Shale, sandy	20	120	
Sandstone and sandy shale, **Upper Raleigh**	98	218	
Shale, dark	2	220	
Shale, sandy, brown	25	245	
Fire clay and shale, **Little Raleigh**	5	250	
Sandstone, buff, **Lower Raleigh**	86	336	
Coal, Beckley, (2261′ L.)	4	340	240′

Another section was measured by Krebs along road, descending from a summit northwestward to Piney Creek, at Sullivan, as follows:

Section at Sullivan, Town District.

	Thickness. Feet.	Total. Feet.	
New River Group (380′)			
Sandstone and concealed	60	60	
Bench, **Sewell Coal horizon**	2	62	62′
Sandstone	43	105	
Shale, sandy	5	110	
Sandstone, **Upper Raleigh**, massive, gray	125	235	
Shale, sandy, buff	30	265	
Sandstone, **Lower Raleigh**, buff	95	360	
Shale	5	365	
Coal, Beckley	5	370	308′
Sandy shale to Piney Creek, (2290′ B.)	10	380	

The above section was taken to the dip, so that the interval given between the **Sewell Coal** horizon and the **Beckley** is too great.

The following aneroid section was measured by Teets from the summit of Round Knob northwestward along road to Crow, as follows:

Round Knob Section, Shady Spring District.

New River Group (410′)	Thickness. Feet.	Total. Feet.	
Concealed pasture land	15	15	
Sandstone, massive	25	40	
Concealed, bench	10	50	
Concealed, (pasture)	105	155	
Shale, slaty	8	163	
Coal 2′			
Shale, slaty 8 } **Beckley**	12	175	175′
Coal 2			
Slate	2	177	
Shale, **Quinnimont**	73	250	
Shale, slaty	6	256	
Coal, Fire Creek	2	258	83′
Slate	3	261	
Sandstone, massive, medium grained	45	306	
Shale, sandy, and sandstone	74	380	
Shale, slaty	4	384	
Coal blossom, No. 9 Pocahontas	1	385	127
Shale, slaty	5	390	
Shale, sandy	10	400	
Sandstone and concealed to Crow, (2505′ B.)	10	410	

This section was taken to the dip, so the intervals given are too great.

An aneroid section by Teets, near the head of Winding Gulf, descending from a point in the Town-Slab Fork District Line, ½ mile northeast of Winding Gulf P. O. to Lynwinn, and joined to Diamond Core Test Hole, Lynwinn No. 1 (153), gives the following:

Lynwinn Section, Slab Fork District.

New River Group (582′ 10″)	Thickness. Ft.	In.	Total. Ft.	In.
Sandstone and sandy shale	50	0	50	0
Concealed and sandy shale	70	0	120	0
Concealed, bench	30	0	150	0
Sandy shale and concealed	35	0	185	0
Sandstone, massive	40	0	225	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy and slaty	15	0	240	0	
Slate, dark	1	0	241	0	
Shale, slaty and sandy	44	0	285	0	
Concealed and sandy shale	45	0	330	0	
Concealed, bench	20	0	350	0	
Shale, sandy	40	0	390	0	
Slate	5	0	395	0	
Coal 3′ 0″					
Bone 0 3½ **Beckley.**	4	10	399	10	399′ 10″
Coal 1 6½					
Shale, slaty	4	2	404	0	
Coal, Beckley, "Split"	0	7	404	7	
Concealed to Winding Gulf to top of Core Test Hole (153), elevation, 2210′ B	5	5	410	0	
Thence with boring:					
Casing (surface)	20	0	430	0	
Sandstone, shale partings	3	6	433	6	
Sandstone, very hard	9	4	442	10	
Shale, black	2	2	445	0	
Sandstone, shale partings	35	5	480	5	
Shale, black	9	1	489	6	
Slate, blue	10	2	499	8	
Shale, green	0	5	500	1	
Sandstone, **Pineville**, hard	45	0	545	1	
Shale, blue	6	2	551	3	
Slate	11	3	562	6	
Coal, No. 9 Pocahontas	0	3	562	9	162′ 11″
Shale, blue	1	7	564	4	
Sandstone, shale partings	18	1	582	5	
Coal, No. 8 Pocahontas	0	5	582	10	20′ 1″
Pocahontas Group (167′ 8″)					
Fire clay	2	2	585	0	
Shale, grayish	6	0	591	0	
Sandstone, very hard	3	0	594	0	
Shale, sandstone partings 9′ 2″					
Shale, blue 2 4					
Shale, light 1 0	31	8	625	8	
Shale, blue 2 2					
Shale, sandstone partings 17 0					
Sandstone	20	3	645	11	
Shale, blue	2	1	648	0	
Sandstone, very hard	19	0	667	0	
Slate	4	2	671	2	
Sandstone, very hard	5	3	676	5	
Shale, sandstone partings	2	0	678	5	
Slate	1	3	679	8	
Coal, No. 4 Pocahontas?	0	2	679	10	97′ 0″
Sandstone	3	7	683	5	
Shale, blue	19	0	702	5	
Sandstone, shale partings	31	7	734	0	
Shale, blue	9	0	743	0	
Coal, No. 3 Pocahontas	4	6	747	6	67′ 8″
Fire clay to bottom	3	0	750	6	

An aneroid section obtained by Teets in railroad cut, on the north side of Winding Gulf, about one mile north of Lynwinn, descending westward, gives the following:

Section One Mile North of Lynwinn, Town District.

New River Group (135′)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, massive	15	0	15	0	
Slate, gray	0	3	15	3	
Coal 1′ 6″					
Coal, softer 1 8					
Bone 0 5					
Coal, soft 1 5					
Slate, gray 1 2 — Beckley	7	8	22	11	22′ 11″
Coal, gas 0 4					
Slate, gray 0 6					
Coal 0 8					
Shale, slaty, gray	7	1	30	0	
Sandstone, massive, fine grained, ferriferous	23	0	53	0	
Shale, slaty, gray	5	0	58	0	
Coal, Fire Creek	2	0	60	0	37′ 1″
Shale, gray	5	0	65	0	
Shale, ferriferous	13	0	78	0	
Sandstone, massive	8	0	86	0	
Slate, full of plant fossils	13	0	99	0	
Coal, Little Fire Creek	2	1	101	1	40′ 1″
Shale, gray	8	11	110	0	
Shaly slate	6	0	116	0	
Sandstone, gray	9	0	125	0	
Coal, No. 9 Pocahontas	0	10	125	10	15′ 10″
Shale, slaty, (2110′ B.)	9	2	135	0	

An aneroid section obtained by Teets, on the east side of Winding Gulf by descending from the Gulf Smokeless Coal Company's mine to Tams, gives the following:

Tams Section, Slab Fork District.

New River and Pocahontas Groups (320′)	Thickness. Ft.	In.	Total. Ft.	In.
Concealed	32	0	32	0
Slate, draw	0	3	32	3
Coal 0′ 1½″				
Slate, gray 0 1				
Coal, soft 0 4 — Beckley				
Coal 3 4 — Fire Creek	5	9	38	0
Coal, bony 0 2				
Coal, soft 1 8½				
Slate, visible	3	0	41	0
Concealed	34	0	75	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	20	0	95	0	
Sandstone, massive	20	0	115	0	
Shale, sandy	40	0	155	0	
Concealed, bench	20	0	175	0	
Sandstone, massive	50	0	225	0	
Shale, sandy	10	0	235	0	
Sandstone, massive	20	0	255	0	
Shale, sandy	20	0	275	0	
Sandstone	10	0	285	0	
Coal blossom	1	0	286	0	248′
Sandy shale and concealed	24	0	310	0	
Coal, impure 1′ 1″ / **Coal**, soft 0 11 / Bone 0 2 / **Coal** 0 10 — No. 6 Pocahontas	3	0	313	0	27′
Slate, gray, to creek (1736′ L.)	7	0	320	0	

An aneroid section obtained by Teets, near the center of Slab Fork District, on the south side of Stonecoal Creek of the Guyandot River, by descending northward from an opening in the Beckley Coal, 3 miles northeast of Stonecoal Junction, gives the following:

Section 3 Miles Northeast of Stonecoal Junction, Slab Fork District.

New River and Pocahontas Groups (540′)	Thickness. Ft.	In.	Total. Ft.	In.	
Concealed	30	0	30	0	
Sandstone, visible	4	0	34	0	
Coal, prospect opening, croppy, **Beckley**	3	11	37	11	37′ 11″
Slate, visible	2	1	40	0	
Concealed, woodland slope	315	0	355	0	
Slate, visible	2	0	357	0	
Coal, soft 1′ 7″ / Slate 2 7 / **Coal** 1 6 — No. 6 Pocahontas.	5	8	362	8	324′ 9′
Slate	2	4	365	0	
Concealed, woodland slope	150	0	515	0	
Shale, slaty, visible	1	10	516	10	
Coal 0′ 9″ / **Coal**, bony 0 3 / **Coal** 2 2 — No. 3 Pocahontas.	3	2	520	0	157′ 4″
Concealed and sandy shale to Stonecoal Creek (1700′ B.)	20	0	540	0	

An aneroid section by Teets, from a point ¼ mile east of the Raleigh-Wyoming County Line, 3 miles southwest of Slab Fork Station, descending northeastward along county road to Allen Creek, near head:

Section 2.6 Miles Southwest of Slab Fork, Slab Fork District.

New River Group (430′)	Thickness. Feet.	Total. Feet.	
Shale, sandy	10	10	
Sandstone	10	20	
Shale, sandy, and concealed, bench	20	40	
Shale, sandy, and concealed	90	130	
Sandstone	10	140	
Shale, sandy and concealed	35	175	
Sandstone and sandy shale	50	225	
Slate, visible	1	226	
Coal blossom, Beckley	4	230	**230′**
Shale, slaty	5	235	
Shale, sandy, and concealed	35	270	
Concealed, bench	20	290	
Concealed, slope	70	360	
Concealed, bench	20	380	
Shale, sandy, and sandstone, to Allen Creek (1830′ B.)	50	430	**200′**

This section was taken to the strike, but mostly through wooded land, so that strata were not fully exposed.

An aneroid section by Teets, in the eastern part of Slab Fork District, descending southward along county road, from a point in Mitchell Ridge, to Laurel Fork of Stonecoal Creek, gives the following:

Section 2.4 Miles South of Winding Gulf Station, Slab Fork District.

New River and Pocahontas Groups (605′)	Thickness. Feet.	Total. Feet.	
Shale, sandy, and concealed	40	40	
Sandstone, massive, gray	35	75	
Shale, sandy, yellow	25	100	
Shale, sandy, gray	5	105	
Sandstone, massive, coarse grained, buff colored	15	120	
Shale, sandy	20	140	
Sandstone and sandy shale	10	150	
Coal blossom, Little Raleigh	1	151	**151′**
Shale, sandy	7	158	
Fire clay	2	160	
Sandstone	10	170	
Shale, gray, sandy	25	195	
Sandstone, massive, buff colored	10	205	
Shale, sandy	15	220	
Shale, sandy, gray	20	240	
Shale, slaty, gray	10	250	
Shale, sandy	14	264	

	Thickness. Feet.	Total. Feet.	
Coal blossom, Beckley	1	265	114′
Shale, slaty, gray	25	290	
Shale, sandy, and concealed	36	326	
Slate	3-9″	329-9″	
Coal 1′ 4″			
Bone 0 2 } **Fire Creek**	5-3″	335	70′
Coal 3 9			
Shale, visible	1	336	
Concealed	9	345	
Shale, sandy, and concealed	50	395	
Sandstone	9	404	
Limestone, gray, impure	1	405	
Shale, sandy, and sandstone	70	475	
Shale, sandy	70	545	
Concealed and sandy shale	59	604	
Coal blossom, No. 6 Pocahontas (1965′ L.)	1	605	270′

This section was taken to the rise, hence the intervals given are too small.

An aneroid section by Teets in the eastern part of Slab Fork District, northwestward along county road from a point in ridge just east of head of Bragg Branch of Tommy Creek, to Stonecoal Creek, 2.5 miles northwest of Odd P. O., shows the following:

Section 2.5 Miles Northwest of Odd P. O., Slab Fork District.

New River and Pocahontas Groups (815′)	Thickness. Feet.	Total. Feet.	
Shale, sandy, and concealed	53	53	
Coal, (Welch?)	2	55	55′
Shale, sandy, and concealed	75	130	
Sandstone, massive, medium grained	60	190	
Shale, sandy, and concealed	49	239	
Coal blossom, Beckley	1	240	185′
Shale, sandy, and concealed	130	370	
Sandstone, **Pineville**, massive, medium grained	50	420	
Shale, sandy, and sandstone	42	462	
Coal blossom, No. 9 Pocahontas	3	465	225′
Shale, sandy, and sandstone	40	505	
Sandy shale and concealed, bench	25	530	
Shale, sandy, and sandstone	30	560	
Shale, sandy, and concealed, bench	30	590	
Sandstone, massive	30	620	
Shale, sandy, and concealed	10	630	
Sandstone, massive	40	670	
Concealed	10	680	
Concealed, bench	20	700	
Shale, sandy, and concealed	77	777	

		Thickness. Feet.	Total. Feet.	
Coal .....0′ 9″				
Bone 0 2	No. 3 Pocahontas.	3	780	315′
Coal 2 1				
Shale, slaty.....		5	785	
Shale, sandy, and sandstone.....		22	807	
Coal, No. 2 Pocahontas, soft.....		2-10″	809-10″	29′ 10″
Shale, slaty, (1980′ B.).....		5-2″	815	

This section is taken to the dip, hence the intervals are too great. The interval given between the Sewell (Welch?) and No. 3 Pocahontas Coals is 725 feet.

An aneroid section obtained by Teets, in the southeastern part of Slab Fork District, on the southern slope of the Devils Backbone, by descending southwestward along county road about 0.3 mile, thence southeastward along private road, and combined with the McCreery Diamond Core Test Hole No. 1 (156), on north side of Tommy Creek, about one mile west of Odd P. O., reads as follows:

Section One Mile West of Odd P. O., Slab Fork District.

New River and Pocahontas Groups (692′)	Thickness Ft.	In.	Total. Ft.	In.	
Sandy shale and concealed.....	38	0	38	0	
Coal blossom, Welch.....	2	0	40	0	40′ 0″
Shale, sandy.....	10	0	50	0	
Sandstone, massive, Upper Raleigh..	76	0	126	0	
Coal .....1′ 3″					
Slaty fire clay.....0 2 } Little Raleigh	4	0	130	0	90′ 0″
Coal, columnar.....2 7					
Shale, slaty, and sandstone.....	34	0	164	0	
Coal blossom.....	1	0	165	0	35′ 0″
Sandstone	5	0	170	0	
Sandy shale.....	7	0	177	0	
Fire clay.....	3	0	180	0	
Shale, sandy, and sandstone.....	20	0	200	0	
Coal blossom, Beckley.....	2	0	202	0	37′ 0″
Fire clay.....	3	0	205	0	
Sandstone, massive, gray, buff colored	25	0	230	0	
Shale, sandy.....	20	0	250	0	
Sandstone	8	0	258	0	
Coal, Fire Creek.....	2	0	260	0	58′ 0″
Sandstone and sandy shale and concealed to top of Boring No. 156, (elevation, 2560′ B.).....	70	0	330	0	
Thence with boring:					
Unrecorded	301	0	631	0	
Coal, No. 4 Pocahontas.....	0	11	631	11	371′ 11″

	Thickness. Ft.	In.	Total. Ft.	In.	
Unrecorded	16	9	648	8	
Coal 0′ 7½″ / Bone 0 1 / Coal 0 10 — No. 3 Pocahontas "Rider"	1	6½	650	2½	18′ 2½″
Unrecorded	35	8½	685	11	
Coal 2′ 6″ / Coal, bone and sulphur 0 7 — No. 3 Pocahontas	3	1	689	0	38′ 9½″
Slate and fire clay to bottom	3	0	692	0	

An aneroid section obtained by Teets in the southeastern portion of Slab Fork District, descending westward along country road from a point on the western end of the Devils Backbone to Tommy Creek at school house 3.2 miles west of Odd P. O., gives the following:

Section 3.2 Miles West of Odd P. O., Slab Fork District.

New River and Pocahontas Groups (960′)	Thickness. Feet.	Total. Feet.	
Shale, sandy	20	20	
Sandstone, massive, medium grained, buff colored	70	90	
Slate, dark	5	95	
Sandy shale and concealed, bench	29	124	
Coal blossom, Welch	1	125	125′ 0″
Shale, slaty	5	130	
Sandstone, massive, **Upper Raleigh**	60	190	
Shale, sandy	5	195	
Sandstone, massive	12	207	
Shale, slaty	2-3	209-3	
Coal 4′ 9 ″ / Slate 0 0½ / Coal 0 5½ — **Little Raleigh**	5-3	214-6	89′ 6″
Slate	2-6	217	
Shale, gray, sandy, and sandstone	43	260	
Concealed and sandy shale	15	275	
Sandstone	15	290	
Shale, sandy, and sandstone	55	345	
Sandy shale and concealed	35	380	
Sandstone and sandy shale	35	415	
Fire clay	2	417	
Slate, dark	3	420	
Sandstone	5	425	
Shale, sandy, and sandstone	14	439	
Coal blossom, Beckley? (Fire Creek)	1	440	225′ 6″
Shale, sandy, and concealed, and sandstone	120	560	
Shale, sandy, and bench	20	580	
Shale, sandy	10	590	
Sandstone, massive, medium grained	30	620	
Shale, sandy, and concealed, bench	30	650	
Shale, sandstone, and concealed	130	780	

		Thickness. Feet.	Total. Feet.	
Sandstone		20	800	
Shale, sandy		15	815	
Shale, dark, slaty		2	817	
Sandstone		28	845	
Shale, sandy, bench		25	870	
Shale, sandy, and sandstone		45-7	915-7	
Coal ....0′ 3 ″				
Bone 0 6				
Coal 2 1	No. 3 Pocahontas..	4-5	920	480′ 0″
Slate 0 0½				
Coal 1 6½				
Slate		3	923	
Shale, sandy		27	950	
Sandstone to bed of Tommy Creek (1915′ B.)		10	960	

The above section extends over about 1.1 miles distance, and is taken to the dip, hence the intervals between the coals given are too great.

An aneroid section obtained by Teets in the southern part of Slab Fork District, also southern part of Raleigh County, descending northward along county road from the center of Tommy Ridge to Tommy Creek at mouth of Turkey Branch, reads as follows:

Section 3.5 Miles Southwest of Stonecoal Junction, Slab Fork District.

	Thickness. Feet.	Total. Feet.
New River Group (515′)		
Concealed	10	10
Sandstone, **Lower Guyandot,** massive	40	50
Shale, sandy, and sandstone	30	80
Shale, sandy, bench	20	100
Shale, sandy, and sandstone	35	135
Concealed, bench	15	150
Shale, sandstone and concealed	90	240
Sandstone, **Lower Raleigh,** massive, coarse grained, friable, buff colored	65	305
Shale, sandy	10	315
Sandstone	15	330
Shale, sandy, and sandstone	20	350
Sandstone	10	360
Shale, sandy, and concealed	30	390
Concealed and sandy shale, bench	20	410
Shale, sandy, and concealed	50	460
Shale, sandy, bench	15	475
Shale, sandy, and sandstone	30	505
Concealed, bench	10	515
Pocahontas Group (315′)		
Sandstone, **Flattop Mountain**	15	530

	Thickness. Feet.	Total. Feet.	
Shale, sandy, and concealed	48	578	
Shale, slaty	1-6	579-6	
Coal blossom, No. 7 Pocahontas	0-6	580	
Shale, and fire clay	5	585	
Sandstone	15	600	
Shale, sandy, and sandstone	20	620	
Shale, sandy	9	629	
Coal blossom, No. 6 Pocahontas	1	630	50′
Shale, slaty, and fire clay	5	635	
Sandstone, massive	15	650	
Shale, sandy, bench	20	670	
Shale, sandy, and sandstone	95	765	
Shale, slaty	1-4	766-4	
Coal 1′ 6″			
Bone 0 1			
Coal 1 4 **No. 3 Pocahontas**	3-8	770	140′
Bone 0 6			
Coal 0 3			
Slate	2	772	
Shale, sandy, and concealed to Tommy Creek (1850′ B.)	58	830	

An aneroid section obtained by Teets in the southern part of Slab Fork District, and southern part of Raleigh County, descending southward from a point 2.5 miles northeast of Basin P. O., along county road, thence southeastward to Wiley Spring Branch of Devils Fork of Guyandot River, at a point 2 miles northeast of Basin P. O., reads as follows:

Section 2 Miles Northeast of Basin P. O., Slab Fork District.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (285′)					
Sandstone and sandy shale	73	0	73	0	
Coal blossom, Beckley	2	0	75	0	75′
Shale, sandy, and concealed	210	0	285	0	
Pocahontas Group (350′)					
Sandstone, **Flattop Mountain**, massive cliff	100	0	385	0	
Shale, sandy, and concealed	68	0	453	0	
Shale, slaty	1	0	454	0	
Coal, No. 6 Pocahontas, impure	1	0	455	0	380′
Shale, slaty	5	0	460	0	
Sandstone, massive	20	0	480	0	
Shale, sandy, bench	15	0	495	0	
Sandstone, massive	30	0	525	0	
Shale, sandy, and sandstone	40	0	565	0	
Shale, slaty	5	8	570	8	
Coal, soft 0′ 7″ **No. 3 Poca-**					
Coal, cannelly, bony 2 7 **hontas.**	4	4	575	0	120′
Coal 1 2					
Sandstone and sandy shale	47	8	622	8	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal .....0′ 5″					
Bone 0 1					
Coal .....1 0 } No. 2 Pocahontas	2	4	625	0	50′
Slate 0 3					
Coal 0 7					
Shale, gray, slaty, to Wiley Spring Branch, (2175′ B)	10	0	635	0	

The following aneroid section was measured by Krebs, descending northeastward along road leading to Whorley P. O.:

Section at Whorley P. O., Shady Spring District.

New River Group (590′)	Thickness. Feet.	Total. Feet.	
Sandstone, **Upper Raleigh,** massive.....	124	124	
Coal blossom, Little Raleigh.....	1	125	125′
Shale, sandy.....	5	130	
Sandstone, massive.....	30	160	
Shale, sandy.....	5	165	
Sandstone, **Lower Raleigh,** massive.....	121	286	
Coal blossom, Beckley.....	4	290	165′
Shale, sandy.....	40	330	
Sandstone, massive.....	50	380	
Sandy shale and concealed.....	90	470	
Sandstone, massive.....	70	540	
Coal, Little Fire Creek.....	1	541	251′
Shale, dark.....	39	580	
Sandstone to Piney Creek (1970′ B.).....	10	590	

The following aneroid section was measured by Krebs, descending along road southward from Sylvia to Piney Creek at Raleigh Station:

Section at Raleigh Station, Shady Spring District.

New River Group (265′)	Thickness. Feet.	Total. Feet.	
Sandy shale and sandstone.....	120	120	
Coal, Beckley.....	5	125	125′
Sandy shale.....	5	130	
Sandstone	35	165	
Shale, dark.....	5	170	
Sandy shale and sandstone.....	53	223	
Fire clay.....	2	225	100′
Sandstone, buff.....	19	244	
Coal, Fire Creek, soft.....	1	245	20′
Shale, sandy.....	12	257	
Coal, impure, **Little Fire Creek**.....	1	258	13′
Shale, dark.....	2	260	
Shale, sandy, buff, to Piney Creek (2080′ B)	5	265	

Another section was obtained by Krebs, descending from a summit southeastward along road leading to Craborchard Creek at Crab Orchard P. O., as follows:

Section at Crab Orchard P. O., Town District.

New River Group (275')	Thickness. Feet.	Total. Feet.	
Sandy shale and concealed	20	20	
Coal blossom, Iaeger, 0' to	1	21	21'
Fire clay	2	23	
Sandy shale and concealed	37	60	
Shale, dark	15	75	
Shale, sandy	15	90	
Sandstone, buff	25	115	
Sandstone, dark, friable, **Upper Guyandot**	50	165	
Fire clay and concealed	5	170	
Sandstone, **Lower Guyandot**	40	210	
Bench	5	215	
Sandy shale and concealed	43	258	
Fire clay, **Sewell Coal horizon**	2	260	239'
Sandstone and concealed to creek (2275' B.)	15	275	

The foregoing section was taken to the rise so that the interval between the Iaeger Coal and Sewell Coal is too small.

Another aneroid section was measured by Krebs, descending from a summit, 2.5 miles southeastward from Glen White Junction, along road southwestward to Laurel Branch, and joined to Beaver Diamond Core Test Hole (123), as follows:

Section 2.5 Miles Southeast of Glen White, Trap Hill District.

New River Group (732')	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone and concealed	50	0	50	0	
Shale, sandy	25	0	75	0	
Sandstone, friable, buffish	39	0	114	0	
Coal	1	0	115	0	115' 0"
Fire clay	5	0	120	0	
Sandy shale and concealed	170	0	290	0	
Sandstone, hard, gray	30	0	320	0	
Sandstone and concealed to top of Diamond Core Test Hole No. 123 (2150' B.)	5	0	325	0	
Thence with Core Test:					
Conductor	22	8	347	8	
Shale, sandy	10	1	357	9	
Slate	0	4	358	1	
Coal 0' 9" / Slate 0 4 / **Coal** 2 4 — **Sewell**	3	5	361	6	246' 6"

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay	2	1	363	7	
Sandstone, very hard	41	0	404	7	
Shale, black	32	6	437	1	
Coal, (Welch)	0	4	437	5	75′ 11″
Fire clay	1	1	438	6	
Sandstone, very hard. 123′ 6″ } Upper					
Sandstone, hard ..... 1 4 } **Raleigh**	124	10	563	4	
Shale, dark	31	2	594	6	
Sandstone, **Lower Raleigh**	129	8	724	2	
Coal, Fire Creek	0	11	725	1	287′ 8″
Fire clay	1	0	726	1	
Sandstone to bottom	5	11	732	0	

An aneroid section was obtained by Krebs, descending from a summit southwestward along road leading from Beaver Creek and joined to New River Company's Core Test No. 1 (158), 3 miles southeast of Abney P. O., at Bowyer School, as follows:

Section 3 Miles Southeast from Abney P. O., Shady Spring District.

New River and Pocahontas Groups (809′ 8″)	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy shale	5	0	5	0	
Sandstone	50	0	55	0	
Sandy shale	55	0	110	0	
Shale, dark	5	0	115	0	
Sandy shale and concealed	77	0	192	0	
Coal blossom, Sewell	3	0	195	0	195
Sandy shale and concealed	44	0	239	0	
Coal blossom, Welch	1	0	240	0	45′
Sandy shale and concealed	33	0	273	0	
Fire clay	2	0	275	0	
Sandstone and concealed	88	0	363	0	
Shale, dark	2	0	365	0	
Sandstone and concealed	80	0	445	0	
Bench	10	0	455	0	
Sandstone and concealed	80	0	535	0	
Coal, Fire Creek	5	0	540	0	300′
Sandstone and concealed to top of Core Test	120	0	660	0	
Thence with Core Test Hole No. 158:					
Gravel, boulders and sandstone	45	0	705	0	
Sandstone	22	0	727	0	
Slate, blue	12	0	739	0	
Sandstone, light	20	0	759	0	
Coal ..... 0′ 8″ }					
Slate, dark..16 0 } **No. 7 Pocahontas.**	18	2	777	2	237′ 2″
Coal ..... 1 6 }					
Fire clay	2	6	779	8	
Slate, blue	17	0	796	8	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, No. 6 Pocahontas	3	0	799	8	22′ 6″
Fire clay	2	0	801	8	
Sandstone to bottom	8	0	809	8	

An aneroid section by Krebs, descending from a high summit between Bowyer and Beaver Creeks, southeastward along road to Beaver Creek, 3.2 miles southwest of Shady Spring P. O., gives the following:

Section 3.2 Miles Southwest of Shady Spring P. O., Shady Spring District.

	Thickness. Feet.	Total. Feet.	
New River Group (455′)			
Shale, sandy	5	5	
Sandstone, friable, concealed	20	25	
Shale, sandy, buff	50	75	
Shale, sandy, mixed with slate	30	105	
Shale, dark	5	110	
Sandstone, hard, gray	7	117	
Coal blossom, Sewell	3	120	120′
Shale, dark	5	125	
Sandstone, dark, gray....25′ } **Welch**	60	185	
Sandstone, buff, friable...35 }			
Shale, sandy	30	215	
Shale, dark	5	220	
Sandstone and sandy shale	13	233	
Shells, sandy	39	272	
Shale, buff	3	275	
Shale, sandy	20	295	
Shale, dark	5	300	
Sandstone and shale, dark	48	348	
Shale, dark	2	350	
Sandy shale and concealed	15	365	
Sandstone, **Quinnimont**, buff	60	425	
Sandy shale and concealed	17	442	
Coal, Fire Creek	3	445	325′
Shale, dark, and concealed to Beaver Creek, (2660′ B.)	10	455	

The above section was taken to the rise, so the interval between the Sewell and Fire Creek Coals is too small.

An aneroid section obtained by Krebs, descending from a summit one mile southwest of Shady Spring P. O., north, and joined to Henry Massey Core Test Hole No. 1 (163), on Left Fork of Beaver Creek, ½ mile southwest of Shady Spring P. O., reads as follows:

Section ½ Mile Southwest of Shady Spring P. O., Shady Spring District.

	Thickness.		Total.		
New River Group (460')	Ft.	In.	Ft.	In.	
Sandstone and concealed	110	0	110	0	
Bench	5	0	115	0	
Sandstone and concealed	45	0	160	0	
Sandstone, buff	4	0	200	0	
Sandy shale and concealed	21	0	221	0	
Coal, Beckley	4	0	225	0	225'
Shale, sandy and concealed	83	0	308	0	
Coal, Fire Creek	2	0	310	0	85'
Sandy shale and concealed	80	0	390	0	
Shale, dark	5	0	395	0	
Shale, sandy	65	0	460	0	
Pocahontas Group (375')					
Sandstone, massive, to top of Henry Massey Core Test Hole No. 1 (163), elevation, 2625' B	75	0	535	0	
Thence with Core Test Hole:					
Surface	2	0	537	0	
Sandstone, hard	6	0	543	0	
Slate, dark	20	0	563	0	
Sandstone, hard	23	0	586	0	
Slate, dark	2	0	588	0	
Sandstone, hard, with coal streaks	57	0	645	0	
Shale, dark	2	3	647	3	
Coal, No. 4 Pocahontas	0	2	647	5	337' 5"
Fire clay, mixed shale	1	7	649	0	
Shale, mixed soapstone	11	0	660	0	
Slate, dark, sandy	13	0	673	0	
Sandstone	3	6	676	6	
Shale, sandy	10	0	686	6	
Sandstone	2	0	688	6	
Shale, sandy	3	0	691	6	
Sandstone	5	6	697	0	
Slate, dark	33	0	730	0	
Shale, dark	2	0	732	0	
Shale, hard, sandy	4	0	736	0	
Sandstone	6	0	742	0	
Coal, No. 3 Pocahontas	4	6	746	6	99' 1"
Shale, dark	0	6	747	0	
Sandstone, coal streaks	3	3	750	3	
Shale, sandy	1	0	751	3	
Sandstone, coal streaks	9	0	760	3	
Shale, dark, mixed with fire clay	6	0	766	3	
Sandstone	3	9	770	0	
Shale, blue	0	2	770	2	
Sandstone	17	0	787	2	
Sandstone, coal streaks	29	7	816	9	
Coal, No. 2 Pocahontas	1	3	818	0	71' 6"
Shale, gray, sandy	4	0	822	0	
Sandstone, hard	4	0	826	0	
Shale, sandy	1	7	827	7	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal ..... 0′ 6″						
Slate, mixed with fire clay 0 5	No. 1					
Coal 0 2	Poca-	6	5	834	0	16′ 0″
Shale, mixed with fire clay 2 4	hon-					
Coal 3 0	tas					
Shale, sandy, to bottom.....		1	0	835	0	

The above section demonstrates that the Pocahontas No. 3 Coal is of commercial thickness at this point, as also No. 1 Pocahontas.

An aneroid section obtained by Teets, in the western portion of Richmond District, on the south side of Pinch Creek, from a point descending southeastward along a private road to Pinch Creek, 2.4 miles northwest of Pluto P. O., reads as follows:

Section 2.4 Miles Northwest of Pluto, Richmond District.

	Thickness. Feet.	Total. Feet.	
Pocahontas Group (390′)			
Sandy shale and concealed	30	30	
Sandstone, massive	47	77	
Coal, good, No. 6 Pocahontas.....	3	80	80′
Concealed, slope	128	208	
Coal, good, No. 3 Pocahontas.....	2	210	130′
Concealed	20	230	
Coal blossom, No. 2 Pocahontas.....	1	231	21′
Shale, gray	24	255	
Sandstone	15	270	
Concealed, bench	20	290	
Shale, sandy, and concealed.....	20	310	
Shale, gray	10	320	
Concealed, slope	40	360	
Concealed, bench	20	380	
Shale, sandy, and concealed.....	10	390	
Mauch Chunk Series (50′)			
Shale, red	20	410	
Shale, sandy and concealed to Pinch Creek (2410′ B.)	30	440	

An aneroid section measured by Teets in the northern portion of Richmond District, about 0.6 mile north of Abraham P. O., descending southward along county road to a point 0.3 mile north of Abraham, gives the following:

Section 0.3 Mile North of Abraham, Richmond District.

	Thickness. Feet.	Total. Feet.	
New River Group (230′)			
Concealed, slope	40	40	
Sandy shale, bench	10	50	
Sandstone, massive, gray buff colored	30	80	
Coal blossom, Fire Creek "Rider"	1	81	'81′
Fire clay, dark	1	82	
Shale, sandy	8	90	
Coal blossom, Fire Creek	2	92	11′
Shale, sandy	8	100	
Sandstone	10	110	
Shale, sandy	10	120	
Sandstone, shaly	10	130	
Shale, sandy	30	160	
Sandstone, gray, medium grained	20	180	
Shale, sandy, and concealed	47	227	
Coal, blossom, No. 8 Pocahontas	3	230	
Pocahontas Group (150′)			
Shale, sandy, and sandstone	60	290	
Shale, sandy, bench	20	310	
Shale, sandy	10	320	
Fire clay	2	322	
Shale, sandy, to foot of hill (2500′ B.)	58	380	

An aneroid section obtained by Teets in the northeastern part of Richmond District, about ½ mile southwest of Meadow Creek, beginning about ½ mile east of Abraham and extending northward along county road toward Meadow Creek, gives the following:

Section 0.5 Mile Southwest of Meadow Creek, Richmond District.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (140′)		
Sandstone and sandy shale	100	100
Concealed, bench	25	125
Shale, sandy, and sandstone	15	140
Mauch Chunk Series (340′)		
Shale, red	15	155
Sandstone	20	175
Shale, sandy	18	193
Limestone, impure, marine fossils	2	195
Shale, red	20	215
Sandstone, flaggy	20	235
Shale, red	5	240
Shale, sandy	15	255
Shale, red	30	285
Sandstone, fine grained, flaggy	15	300
Shale, sandy	30	330

		Thickness. Feet.	Total. Feet.
Shale, red		5	335
Shale, sandy		40	375
Shale, red		10	385
Shale, sandy		5	390
Sandstone, fine grained, gray		2	392
Shale, green		1	393
Shale, red		12	405
Sandstone		10	415
Shale, sandy, and concealed		20	435
Limestone, hard, gray.... 8′ Limestone, hard, gray, full of marine fossils..... 2 Limestone, hard, gray....15	Upper Hinton	25	460
Shale, red, limy		5	465
Sandstone, reddish, limy, fine grained		5	470
Shale, light red, (1740′ B.)		10	480

An aneroid section measured by Krebs, descending from a summit northeastward along road to Pinch Creek, 2.5 miles northwest of Pluto P. O., gives the following:

Section 2.5 Miles Northwest of Pluto P. O., Richland District.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (300′)		
Sandstone and concealed	55	55
Shale, sandy	5	60
Sandstone and concealed	23	83
Shale, dark	2	85
Shale, sandy, and sandstone	82	167
Coal, No. 3 Pocahontas	3	170
Shale, sandy, and sandstone	45	215
Coal blossom, No. 2 Pocahontas	1	216
Sandstone and sandy shale	84	300
Mauch Chunk Series (225′)		
Shale, red	5	305
Sandstone, massive	20	325
Sandy shale and concealed	125	450
Sandstone, massive	15	465
Sandstone, shale and concealed	30	495
Sandstone to Pinch Creek (2427′ L.)	30	525

An aneroid section measured by Krebs, descending from Whiteoak Mountain along road leading from Cooper Creek to Chestnut Grove School, one mile northwest of Jumping Branch P. O., gives the following:

Section 1 Mile N. W. of Jumping Branch P. O., Jumping Branch District, Summers County.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (420′)		
Sandstone, massive	50	50
Sandy shale, bench	2	52
Sandy shale and concealed	68	120
Sandstone, massive, gray	20	140
Coal blossom, No. 4 Pocahontas	1	141
Shale, dark	4	145
Sandstone, massive	50	195
Coal, blossom, No. 3 Pocahontas	1	196
Shale, sandy	24	220
Fire clay, dark	2	222
Shale, sandy	8	230
Fire clay, dark	2	232
Sandstone and concealed	88	320
Coal blossom, No. 2 Pocahontas	1	321
Shale, sandy, and concealed	84	405
Shale, dark	1	406
Shale, sandy	14	420
Mauch Chunk Series (220′)		
Shale, red, with greenish sandy shale partings	50	470
Sandstone, medium coarse	70	540
Red shale and concealed to Chestnut Grove School, (2388′ L.)	100	640

The following aneroid section was obtained by Krebs, descending along road from a point 1.5 miles east of Jumping Branch P. O., eastward to Beech Run:

Section 3 Miles East of Jumping Branch P. O., Jumping Branch District.

	Thickness. Feet.	Total. Feet.
Mauch Chunk Series (960′)		
Sandstone, fine grained	40	40
Shale, sandy	25	65
Shale, brown, limy	13	78
Limestone	2	80
Shale, red	100	180
Shale, sandy	20	200
Shale, limy	15	215
Sandstone, brown	15	230
Shale, sandy	5	235
Shale, limy	5	240
Shale, red	15	255
Shale, yellowish gray	10	265
Shale, red	15	280
Shale, yellowish gray	10	290
Sandstone, buff	45	335
Shale, red	5	340

PLATE VIII.—View on Piney Creek near Staunford, showing New River and Pocahontas Groups.

	Thickness. Feet.	Total. Feet.
Limestone, dark buff, top portion fossiliferous, making cliff	55	395
Shale, yellow	10	405
Shale, limy, red	5	410
Shale, dark red	5	415
Shale, red, limy	25	440
Shale, dark red	25	465
Shale, red, limy	60	525
Sandstone, brown	5	530
Shale, red	25	555
Sandstone, brown	5	560
Shale, yellow	5	565
Shale, red	35	600
Shale, yellow	10	610
Sandstone, dark brown	20	630
Shale, red	75	705
Shale, yellowish green	3	708
Shale, red	2	710
Sandstone, dark brown	5	715
Shale, red	35	750
Sandstone, dark brown	15	765
Shale, red	10	775
Shale, gray	5	780
Sandstone, dark brown	18	798
Shale, green	2	800
Sandstone, dark red	10	810
Shale, red	40	850
Sandstone, dark	10	860
Shale, gray	30	890
Shale, red	20	910
Sandstone, dark brown	10	920
Shale, red and yellow	5	925
Sandstone, dark brown	5	930
Shale, gray and yellow	24	954
Shale, dark, red, to top of B. T. Baker Well No. 1 (221)	6	960

For the record of this boring, see Section 2 Miles Southwest of Hinton, pages 87-9.

The foregoing section begins about 800 feet under the base of the Pottsville Series, so that the Mauch Chunk Series will be about 2780 feet thick at this point.

An aneroid section obtained by Teets in the northeastern part of Raleigh County, Richmond District, descending southwestward along trail to Pinch Creek, 0.2 mile east of Glade Creek, gives the following:

Section 1.4 Miles Southeast of Table Rock P. O., Richmond District.

	Thickness. Feet.	Total. Feet.
New River Group (30′)		
Shale, sandy, and concealed	30	30
Pocahontas Group (575′)		
Sandstone, massive cliff, **Flattop Mountain.**	30	60
Shale, sandy, and concealed	60	120
Slate, black, **Pocahontas No. 7**	2	122
Shale, sandy, and concealed	53	175
Concealed, bench	15	190
Sandstone and concealed	44	234
Coal blossom, No. 6 Pocahontas	1	235
Shale, sandy, bench	15	250
Sandstone, massive, medium grained	110	360
Slate, dark	2	362
Sandstone and sandy shale	73	435
Concealed, bench	25	460
Sandstone, massive	130	590
Concealed, bench	15	605
Mauch Chunk Series (90′)		
Concealed	75	680
Red shale (2055′ B.)	15	695

This section was taken to the dip so the intervals given are too great. The measures are rising rapidly.

An aneroid section measured by Teets from a point on Flattop Mountain, one mile northeast of the Raleigh-Wyoming-Mercer Corner, along the county road northeastward to school-house in the Mercer-Raleigh County Line at the Rock-Jumping Branch District Corner of Mercer County, gives the following:

Bluff Mountain Section, Slab Fork District.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (560′)					
Sandstone	35	0	35	0	
Shale, sandy, and concealed	73	0	108	0	
Coal blossom, Sewell	2	0	110	0	110′
Shale, sandy, and sandstone	50	0	160	0	
Concealed, bench	20	0	180	0	
Shale, sandy, and sandstone	50	0	230	0	
Shale, gray, and sandstone	20	0	250	0	
Coal blossom	0	6	250	6	
Shale, sandy	107	10	358	4	
Coal blossom, Beckley	1	8	360	0	250′
Shale, sandy, and concealed	88	4	448	4	
Coal blossom, Fire Creek	1	8	450	0	90′
Concealed and shale	75	5	525	5	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal, impure. 0′ 6″						
Coal 3 6						
Bone 0 1	Little Fire Creek	4	7	530	0	80′
Coal 0 6						
Slaty shale		5	0	535	0	
Concealed (2950′ B.).....		25	0	560	0	

This section was taken to the dip, so the intervals given are too great.

An aneroid section measured by Teets in the extreme southern part of Raleigh County, descending northeastward along trail from a point in Barkers Ridge in the Wyoming-Raleigh County Line, to Long-Wanted School just below the mouth of the Lefthand Fork of Bluff Fork of Devils Fork, gives the following:

Long-Wanted School Section, Slab Fork District.

New River Group (280′)	Thickness. Feet.	Total. Feet.	
Sandstone, massive	64	64	
Coal blossom, Beckley.....	1	65	65′
Shale, sandy, and concealed.....	55	120	
Concealed, bench	20	140	
Shale, sandy, and concealed.....	20	160	
Concealed, bench	15	175	
Shale, sandy, and concealed.....	15	190	
Concealed, bench	15	205	
Shale, sandy, and concealed.....	62	267	
Coal, abandoned coal opening, No. 8 Pocahontas, reported	3	270	
Concealed (2810′ B.).....	10	280	

This section was taken to the rise, so the intervals given are too small.

An aneroid section measured by Teets in the southern part of Slab Fork District, descending northeastward along county road from a point on Barkers Ridge and in the Raleigh-Wyoming County Line, about 0.7 mile northeast of Basin P. O., to Devils Fork of Guyandot River, at mouth of Wiley Spring Branch, gives the following:

Section 1.4 Miles Northeast of Basin P. O., Slab Fork District.

New River and Pocahontas Groups (720′)	Thickness. Feet.	Total. Feet.	
Shale, sandy, and concealed	68	68	
Fire clay, **Beckley**	2	70	70′
Shale, sandy, and sandstone	23	93	
Fire clay	2	95	
Shale, sandy	5	100	
Sandstone, **Quinnimont**, massive cliff	59	159	
Coal blossom, Fire Creek	1	160	90′
Shale, sandy, and concealed	80	240	
Concealed, bench	20	260	
Shale, sandy, and concealed	10	270	
Sandstone, massive	20	290	
Shale, sandy (9′ 10″)	10	300	
Coal .....2′ 0″ ⎫ **Coal**, harder.1 3 ⎬ **No. 9 Pocahontas** (5′ 2″) **Coal**, visible.1 11 ⎭	5	305	145′
Shale, sandy, and sandstone	98	403	
Coal blossom, No. 7 Pocahontas	2	405	100′
Shale, sandy, and concealed	15	420	
Sandstone	20	440	
Shale, sandy, and concealed	40	480	
Sandstone	40	520	
Shale, sandy, and sandstone	25	545	
Concealed, bench	15	560	
Sandstone and sandy shale	27	587	
Coal blossom, No. 3 Pocahontas	3	590	185′
Sandstone	80	670	
Shale, sandy, and concealed	20	690	
Shale, slaty	20	710	
Sandstone, massive, (2090′ B.)	10	720	

This section was taken with the dip, hence the intervals given are too great except from the Beckley Coal to the Fire Creek, which was taken on the rise.

MERCER COUNTY SECTIONS.

An aneroid section obtained by Teets in the northwestern part of Mercer County, descending southeastward along county road from a point northwest of Giatto, gives the following:

Giatto Section, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (235′)					
Shale, sandy	5	0	5	0	
Sandstone, **Quinnimont**, massive	80	0	85	0	
Shale, sandy, **Fire Creek Coal horizon**	20	0	105	0	
Sandstone, massive	64	4	169	4	
Coal blossom, Little Fire Creek	0	8	170	0	170′
Shale, sandy	37	8	207	8	
Coal, No. 9 Pocahontas, impure	2	4	210	0	40′
Shale, sandy	23	8	233	8	
Coal, No. 8 Pocahontas, good	1	4	235	0	25′
Pocahontas Group (375′)					
Shale, slaty	2	0	237	0	
Sandstone, **Flattop Mountain**	38	0	275	0	
Shale, sandy	8	0	283	0	
Fire clay, **No. 7 Pocahontas**	2	0	285	0	50′
Shale, sandy, and concealed	28	0	313	0	
Fire clay	2	0	315	0	
Shale	13	6	328	6	
Coal blossom, No. 6 Pocahontas	1	6	330	0	45′
Shale and fire clay	5	0	335	0	
Sandstone, **Eckman**	35	0	370	0	
Shale, sandy	4	0	374	0	
Coal blossom, No. 5 Pocahontas	1	0	375	0	45′
Shale, sandy	9	0	384	0	
Coal blossom, No. 4 Pocahontas	1	0	385	0	10′
Shale, sandy, and concealed	60	0	445	0	
Sandstone, **Upper Pocahontas**, massive	27	0	472	0	
Shale, gray	3	7	475	7	
Coal 1′ 3″ Bone 0 3 } **No. 3 Pocahontas** **Coal** 2 11	4	5	480	0	95′
Shale, sandy, sandstone and concealed	93	0	573	0	
Coal blossom, No. 1 Pocahontas	2	0	575	0	95′
Sandstone, **Landgraff** (2400′ B.)	35	0	610	0	

An aneroid section measured by Krebs, descending from a summit northeastward to Giatto P. O., Rock District, reads as follows:

Giatto Section, Rock District.

	Thickness. Feet.	Total. Feet.	
New River Group (205′)			
Shale, sandy	44	44	
Coal blossom, Beckley?	1	45	45′
Shale, sandy, and concealed	94	139	
Coal blossom, Fire Creek?	1	140	95′
Sandstone, buff, coarse grained	20	160	
Shale, sandy	4	164	
Coal blossom, Little Fire Creek?	1	165	25′
Sandstone, friable	20	185	

	Thickness. Feet.	Total. Feet.	
Shale, sandy	9	194	
Coal blossom	1	195	
Shale, sandy, dark	10	205	
Pocahontas Group (400′)			
Sandstone, **Flattop Mountain**, massive, buff	40	245	
Shale, sandy	44	289	
Coal blossom, No. 7 Pocahontas	1	290	125′
Shale, sandy	29	319	
Coal, soft	2	321	
Shale, sandy	38	359	
Coal blossom, No. 6 Pocahontas	1	360	70′
Sandstone and concealed	51	411	
Coal blossom, No. 5 Pocahontas	4	415	55
Sandstone	9	424	
Coal blossom	1	425	
Shale, sandy, and concealed	10	435	
Coal, No. 4 Pocahontas	3-7	438-7	23′ 7″
Shale, sandy	1-5	440	
Sandstone, **Upper Pocahontas**	75	515	
Shale, sandy	5	520	
Coal blossom, No. 3 Pocahontas	5	525	86′ 5″
Shale, sandy	68	593	
Coal, No. 2 Pocahontas	2	595	70′
Shale, dark, to N. & W. Ry. (2440′ B.)	10	605	

An aneroid section measured by Krebs, descending along road from Flattop Mountain, southeastward to Buckeye Hollow of Simmons Creek, 1 mile west of Goodwill P. O., gives the following:

Section 1 Mile West of Goodwill P. O., Rock District.

	Thickness. Feet.	Total Feet.	
New River Group (653)			
Sandy shale and concealed	90	90	
Coal blossom, Sewell "A"	1	91	
Shale, sandy, and concealed	54	145	
Coal blossom, Sewell	2	147	147′
Shale, sandy, and concealed	93	240	
Coal blossom, Welch	1	241	94′
Sandstone, conglomerate, **Upper Raleigh**	42	283	
Coal blossom, Little Raleigh	2	285	
Sandstone, buff 25′ Shale, sandy 10 Sandstone, dark buff 30 Sandstone 38 — **Lower Raleigh**	103	388	
Coal blossom, Beckley "A"	2	390	
Sandstone, friable	26	416	
Coal blossom, Beckley	4	420	179
Sandstone and sandy shale	70	490	
Coal blossom, Fire Creek	1	491	71′
Shale, sandy	59	550	

	Thickness. Feet.	Total. Feet.	
Sandstone	20	570	
Coal blossom, No. 9 Pocahontas	1	571	80′
Sandstone and sandy shale	79	650	
Fire clay, dark, **No. 8. Pocahontas**	3	653	82′
Pocahontas Group (307′)			
Sandstone, **Flattop Mountain**, friable, coarse grained	27	680	
Sandstone and concealed	130	810	
Coal, No. 6 Pocahontas	4	814	161′
Sandstone and concealed	120	934	
Coal, No. 3 Pocahontas (2380′ B.)	6	940	126′
Sandstone and concealed to Simmons Creek	20	960	

An aneroid section measured by Krebs, descending northeastward along road to Flipping Creek at Goodwill P. O., reads as follows:

Section at Goodwill P. O., Rock District.

Pocahontas Group and Mauch Chunk Series (445′)	Thickness. Feet.	Total. Feet.	
Sandy shale and concealed	28	28	
Coal blossom, No. 6 Pocahontas	2	30	30′
Shale, dark	2	32	
Sandstone	43	75	
Coal blossom, No. 5 Pocahontas	4	79	49′
Sandstone and concealed	115	194	
Coal, No. 3 Pocahontas	6	200	121′
Sandstone and concealed	30	230	
Concealed to Flipping Creek (2255′ B.)	215	445	

An aneroid section obtained by Krebs, descending southwest along road to Flipping Creek, ½ mile west of Duhring P. O., gives the following:

Section ½ Mile West of Duhring P. O., Rock District.

Pocahontas Group (405′)	Thickness. Feet.	Total. Feet.	
Sandstone and concealed	60	60	
Shale, dark	4	64	
Slate, dark, marine fossils (0′ 6″)	0.5	64.5	
Coal, No. 4 Pocahontas (3′ 6″)	3.5	68	68′
Shale, sandy	2	70	
Sandstone and concealed	60	130	
Coal, No. 3 Pocahontas	5	135	67′
Sandstone and concealed	55	190	
Coal, No. 2 Pocahontas	2	192	57′
Shale, sandy	5	197	
Sandstone, **Vivian**	30	227	

	Thickness. Feet.	Total. Feet.	
Coal, No. 1 Pocahontas (0′ 6″)	0.5	227.5	**35.5′**
Sandstone, gray	15.5	243	
Shale, green	24	267	
Shale, dark, marine fossils, North Fork	1	268	
Shale, sandy	22	290	
Shale, sandy	89	379	
Shale, dark	1	380	
Shale, sandy, and concealed	25	405	
Mauch Chunk Series (45′)			
Shale, red	5	410	
Sandstone, gray	10	420	
Shale, red, to Flipping Creek (2210′ B.)	30	450	

An aneroid section obtained by Teets in the northwestern part of Mercer County, descending northwestward along trail and private road from a high point 1.3 miles northeast of Clarks Gap to Sylvia or Widemouth P. O., gives the following:

Widemouth P. O. Section, Rock District.

	Thickness. Feet.	Total. Feet.	
New River Group (390′)			
Shale, sandy, and concealed	28	28	
Slate	0-9	28-9	
Coal, Little Raleigh	1-3	30	**30′**
Fire clay	2	32	
Sandstone, **Lower Raleigh**, massive, medium grained	73	105	
Shale, sandy, and concealed	35	140	
Sandstone	25	165	
Shale, sandy, bench	20	185	
Shale, sandy, and sandstone	23	208	
Coal, good, Fire Creek	2	210	**180′**
Sandstone	23	233	
Coal, croppy, Little Fire Creek	2	235	**25′**
Shale, sandy, and sandstone	85	320	
Sandstone, **Pineville**, massive, coarse grained	50	370	
Shale, sandy, and concealed	18	388	
Slate	1	389	
Coal, No. 8 Pocahontas	1	390	**155′**
Pocahontas Group (360′)			
Shale, slaty	3	393	
Sandy shale and concealed	27	420	
Sandstone	45	465	
Shale, sandy, and concealed	25	490	
Shale, sandy, bench	20	510	
Sandstone, **Eckman**, massive	30	540	
Conglomerate and sandy shale, bench	25	565	
Shale, sandy, and sandstone	85	650	
Slate	5-6	655-6	

		Thickness. Feet.	Total. Feet.	
Coal, bony.....0′ 1 ″				
Coal 1 1½	No. 3 Pocahontas..	4-6	660	270′
Slate 0 6				
Coal 2 9½				
Slaty shale		5	665	
Sandstone and concealed.....		70	735	
Sandstone, visible.....		8	743	
Coal, No. 2 Pocahontas, soft.....		2	745	85′
Shale and concealed to bed of creek (2430′ B.)		5	750	

An aneroid section obtained by Teets in the southeastern edge of Wyoming County, descending northward from summit of Pilot Knob to the head of Gooney Otter Creek in Barkers Ridge District, gives the following:

Pilot Knob Section, Barkers Ridge District, Wyoming County.

New River and Pocahontas Groups (645′)		Thickness. Feet.	Total. Feet.	
Concealed, slope .....20′				
Sandstone 5	Lower			
Concealed, slope and sandstone.50	Raleigh	105	105	
Sandstone, massive 20	Sand-			
Concealed, slope 10	stone			
Concealed, bench		20	125	
Concealed, slope		48	173	
Coal, Fire Creek.....		2	175	175′
Concealed, slope.....		461	636	
Coal .....0′ 11½″				
Bone 0 6	No. 3 Pocahontas..	4	640	465′
Coal 2 6½				
Slate and concealed (2575′ B.).....		5	645	

An aneroid section was obtained by Teets in the northwestern part of Mercer County, descending southward to Rich Creek, at a point 0.7 mile north of Pinoak School, as follows:

Section 0.7 Mile North of Pinoak School, Rock District.

Pocahontas Group (341′)		Thickness. Feet.	Total. Feet.
Concealed		85	85
Slate (1′ 1″)		1	86
Coal .....2′ 0″			
Bone 0 3	No. 3 Pocahontas (3′ 11″)	4	90
Coal 1 8			
Slate		4	94
Sandy shale and concealed.....		26	120

	Thickness. Feet.	Total. Feet.
Sandstone	60	180
Shale and concealed	20	200
Sandstone	70	270
Shale, sandy, and sandstone	20	290
Sandstone	50	340
Slate, dark	1	341
Mauch Chunk Series (99')		
Shale, slaty	4	345
Sandstone to Rich Creek (2370' B.)	95	440

An aneroid section obtained by Teets in the western edge of Mercer County, descending southeastward from a high point in Flattop Mountain, just north of Windmill Gap, via Windmill Gap and thence along a private road to Mannering, exhibits the following:

Mannering Section, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.
New River and Pocahontas Groups (725')		
Sandstone, massive, **Upper Raleigh**	30	30
Shale, sandy, and concealed	35	65
Sandstone, massive, medium grained, gray buff colored..40' / Shale, sandy, bench.....20 / Sandstone, massive.....40 — **Lower Raleigh**	100	165
Shale, sandy	4	169
Coal blossom, Beckley	1	170
Shale, sandy, and concealed, to Windmill Gap	20	190
Shale, sandy, and concealed	15	205
Sandstone	10	215
Shale, sandy	10	225
Sandstone	50	275
Shale, sandy, and sandstone	100	375
Sandstone	20	395
Shale, sandy	10	405
Sandstone	10	415
Shale, sandy, and concealed	30	445
Sandstone	7	452
Slate	1	453
Coal, No. 8 Pocahontas (2660' B.)	2	455
Interval to No. 3 Pocahontas	270	725

An aneroid section obtained by Teets in the southwestern edge of Mercer County, descending southwestward along county road from a point in Flattop Mountain at head of Flipping and Simmons Creeks of Bluestone River and Little Fork of Elkhorn Creek, to the head of Little Fork at point near the McDowell-Mercer Line, 1.5 miles north of Coaldale, gives the following:

Section 1.5 Miles North of Coaldale, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (505')					
Shale, sandy	13	0	13	0	
Shale, slaty	1	4	14	4	
Coal, Welch	0	8	15	0	15'
Fire clay	1	0	16	0	
Sandstone, medium coarse grained, **Upper Raleigh**	29	0	45	0	
Shale, sandy, and sandstone	49	0	94	0	
Coal blossom, Little Raleigh	1	0	95	0	80'
Sandstone, friable	37	11	132	11	
Coal, impure, Little Raleigh	2	1	135	0	40'
Fire clay	2	0	137	0	
Sandstone, **Lower Raleigh**, massive, fine grained	63	0	200	0	
Shale, sandy	34	0	234	0	
Coal blossom, Beckley "A"	1	0	235	0	100'
Fire clay	1	0	236	0	
Shale and sandstone	16	5	252	5	
Coal, weathered, **Beckley**	2	7	255	0	20'
Fire clay	2	0	257	0	
Shale and sandstone	47	0	304	0	
Slate, gray	0	8	304	8	
Coal blossom, Fire Creek	0	4	305	0	50'
Shale, sandy	44	4	349	4	
Coal blossom, Little Fire Creek	0	8	350	0	45'
Fire clay	1	0	351	0	
Shale, sandy	13	0	364	0	
Coal blossom	1	0	365	0	15'
Sandstone, **Pineville**	64	0	429	0	
Coal blossom, No. 9 Pocahontas	1	0	430	0	65'
Shale, sandy, and concealed	70	0	500	0	
Fire clay and gray shale	5	0	505	0	
Pocahontas Group (315')					
Sandstone, massive, friable, coarse grained, **Flattop Mountain**	35	0	540	0	
Shale	5	0	545	0	
Sandstone	50	0	595	0	
Shale, sandy	24	0	619	0	
Coal blossom, No. 6 Pocahontas	1	0	620	0	190'
Fire clay and gray shale	5	0	625	0	
Shale, sandy, and sandstone	15	0	640	0	
Sandstone, massive	65	0	705	0	
Concealed and sandstone	98	0	803	0	
Slate	3	0	806	0	
Coal, No. 3 Pocahontas	9	0	815	0	195'
Shale, (2345' B.)	5	0	820	0	

An aneroid section obtained by Teets in the western part of Mercer County, descending southwestward from a point on the ridge between Flipping and Simmons Creeks to the Buckeye Coal & Coke Company's opening in Buckeye Hollow, reads as follows:

Section 1.3 Miles West of Goodwill, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.	
New River Group (30′)			
Shale, sandy	28	28	
Coal blossom, No. 8 Pocahontas	2	30	30′
Pocahontas Group (240′)			
Shale, sandy, and sandstone	24	54	
Coal, No. 7 Pocahontas	1	55	25′
Shale, sandy	5	60	
Sandstone, Pierpont	50	110	
Shale, sandy	13	123	
Coal blossom, No. 6 Pocahontas	2	125	70′
Shale, sandy	10	135	
Sandstone, massive	45	180	
Shale, sandy, sandstone, and concealed (68′ 11″)	69	249	
Coal 2′ 4″ ⎫			
Bone 0 5 ⎬ No. 3 Pocahontas (6′ 1″)	6	255	130′
Coal 3 4 ⎭			
Concealed	15	270	

An aneroid section obtained by Teets in the southwestern part of Mercer County, descending southward along county road, from a point on a spur ridge between Flipping and Simmons Creeks to Simmons Station, gives the following:

Simmons Station Section, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
Pocahontas Group (455′)					
Shale, sandy	10	0	10	0	
Sandstone, Eckman, massive, medium grained, friable, gray buff colored	40	0	50	0	
Shale, sandy, and sandstone	9	5	59	5	
Coal, No. 4 Pocahontas	0	7	60	0	60′
Fire clay	2	0	62	0	
Shale, sandy, and concealed	38	0	100	0	
Sandstone, Upper Pocahontas, massive	40	0	140	0	
Concealed and sandstone	13	11	153	11	
Coal 1′ 2″ ⎫					
Sulphur 0 1 ⎪					
Coal 1 4 ⎬ No. 3 Pocahontas	6	1	160	0	100′
Bone 0 4 ⎪					
Coal 3 2 ⎭					
Shale, sandy, and concealed	14	6	174	6	
Coal blossom, No. 2 "A" Pocahontas	0	6	175	0	15′
Fire clay	2	0	177	0	
Shale, sandy, and concealed	28	0	205	0	
Sandstone, Vivian and Landgraff	55	0	260	0	
Sandy, shale	44	6	304	6	
Coal blossom, Simmons	0	6	305	0	130′

	Thickness. Ft.	In.	Total. Ft.	In.
Fire clay	2	0	307	0
Shale, sandy, and sandstone	18	0	325	0
Sandstone, flaggy	35	0	360	0
Shale, sandy	24	0	384	0
Slate, dark, perhaps bituminous	1	0	385	0
Shale and sandstone	45	0	430	0
Sandstone	25	0	455	0
Mauch Chunk Series (25′)				
Shale, sandy, yellowish	10	0	465	0
Sandstone	5	0	470	0
Shale, sandy, to N. & W. Ry. track at Simmons, (2240′ B.)	10		480	0

An aneroid section by Teets in the western part of Mercer County, descending southeastward along road from a point on a spur ridge at head of Upper Georges Branch of Crane Creek and branch of Flipping Creek, one mile northwest of Goodwill, gives the following:

Section One Mile Northwest of Goodwill, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (245′)					
Shale and sandstone	23	11	23	11	
Coal, Fire Creek, impure, croppy	1	1	25	0	25′
Shale, sandstone and concealed	97	0	122	0	
Fire clay	1	9	123	9	
Coal, Little Fire Creek	1	3	125	0	100′
Sandstone, **Pineville,** massive, flaggy	55	0	180	0	
Shale, sandy	9	0	189	0	
Coal blossom, No. 9 Pocahontas	1	0	190	0	65′
Fire clay	2	0	192	0	
Shale, sandy, and concealed	53	0	245	0	
Pocahontas Group (335′)					
Sandstone, **Flattop Mountain**	25	0	270	0	
Concealed, bench	20	0	290	0	
Sandstone, massive, friable	40	0	330	0	
Shale, sandy	7	0	337	0	
Fire clay	3	0	340	0	
Shale, sandy, and concealed	20	0	360	0	
Sandstone	15	0	375	0	
Shale, sandy	10	0	385	0	
Shale, slaty	2	0	387	0	
Coal, No. 6 Pocahontas	3	0	390	0	200′
Shale	5	0	395	0	
Shale, sandy	10	0	405	0	
Sandstone	15	0	420	0	
Shale, sandy, and concealed	75	0	495	0	
Sandstone, **Upper Pocahontas,** massive	40	5	535	5	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal .....1′ 1″						
Bone 0 3	No. 3 Pocahontas..	4	7	540	0	150′
Coal 3 3						
Slate...		2	0	542	0	
Shale, sandy, and concealed.....		18	0	560	0	
Sandstone, massive (2370′ B.).....		20	0	580	0	

This section extends over about 1.5 miles, and is taken to the dip.

An aneroid section obtained by Teets in the southwestern part of Mercer County, descending southward from a point on ridge, 0.7 mile northeast of Goodwill, along county road to Flipping Creek at a point one mile southeast of Goodwill, reads as follows:

Section One Mile Southeast of Goodwill, Rock District, Mercer County.

		Thickness. Feet.	Total. Feet.	
Pocahontas Group (230′)				
Shale, sandy, and concealed.....		25	25	
Sandstone, massive, friable coarse grained.....35′	Upper			
Shale, sandy, and concealed 5	Pocahontas.	53	78	
Sandstone 13				
Slate		2-7	80-7	
Coal .....1′ 2″				
Sulphur band.....0 1	No. 3			
Coal, hard.....0 8	Pocahontas	4-7	85-2	85′ 2″
Coal 2 8				
Shale, sandy, slaty.....		9-10	95	
Sandstone, massive, coarse grained.....		15	110	
Shale, sandy.....		6	116	
Shale, slaty.....		2-2	118-2	
Coal, No. 2 Pocahontas, impure.....		1-10	120	34′ 10″
Fire clay.....		2	122	
Shale, sandy, and concealed.....		12	134	
Fire clay.....		1	135	
Shale, sandy.....		9	144	
Coal, No. 1 Pocahontas.....		1	145	25′
Sandstone, Landgraff, massive.....		20	165	
Shale, sandy, and concealed.....		65	230	
Mauch Chunk Series (240′)				
Shale, red.....		5	235	
Shale, sandy.....		9	244	
Shale, red.....		1	245	
Shale, sandy.....		20	265	
Shale, red.....		10	275	
Shale, sandy.....		20	295	
Sandstone, flaggy.....		75	370	
Shale, sandy.....		15	385	

	Thickness. Feet.	Total. Feet.
Sandstone and sandy shale	20	405
Shale, red	15	420
Sandstone	5	425
Shale, red	5	430
Sandstone	10	440
Shale, sandy	5	445
Shale, red and green	5	450
Shale, sandy	12	462
Shale, red	3	465
Sandstone, massive, to Flipping Creek (2230′ B.)	5	470

This section was taken to the rise, so the interval given between the No. 3 Pocahontas and the Mauch Chunk is at least 50 feet too small, and probably more than 100 feet.

The following aneroid section was obtained by Teets in the southwestern part of Mercer County, near Crystal and Montcalm, by descending eastward along road from a point about midway between Crystal and Goodwill, to mouth of Jims Branch of Crane Creek:

Section One Mile Southeast of Crystal, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (375′)		
Shale, sandy	10	10
Sandstone, **Upper Pocahontas**	30	40
Shale, sandy, bench	20	60
Sandstone	10	70
Shale, sandy	13	83
Slate	3	86
Coal 1′ 7″ / Bone 0 4 / **Coal** 2 1 — **No. 3 Pocahontas**	4	90
Slate	5	95
Shale, sandy, and concealed	55	150
Sandstone, **Vivian**, massive, medium grained	30	180
Shale, sandy	20	200
Sandstone, **Landgraff**	10	210
Shale, sandy	40	250
Shale, sandy, yellowish	20	270
Shale, sandy, gray	9	279
Fire clay	1	280
Shale, sandy	70	350
Sandstone, flaggy	25	375
Mauch Chunk Series (45′)		
Shale, red	15	390
Sandstone	6	396
Shale, red	5	401
Sandstone	4	405
Shale, red	8	413
Sandstone to Crane Creek (2230′ B.)	7	420

An aneroid section obtained by Krebs, descending along road southward to North Fork of Mountain Creek, 2.5 miles east of Flattop P. O., reads as follows:

Section 2.5 Miles East of Flattop P. O., Jumping Branch District, Mercer County.

	Thickness. Feet.	Total. Feet.	
New River and Pocahontas Groups (472′)			
Shale	8	8	
Bench	12	20	
Shale, sandy, and concealed	110	130	
Fire clay, **No. 6 Pocahontas Coal horizon**	2	132	132′
Shale, sandy, and concealed	50	182	
Sandstone, massive	40	222	
Fire clay and **coal blossom, No. 4 Pocahontas**	3	225	93′
Shale, sandy, and concealed	75	300	
Coal blossom, No. 3 Pocahontas	2	302	77′
Sandstone	38	340	
Shale	10	350	
Coal blossom, No. 2 Pocahontas	1	351	49′
Shale, sandy, and concealed	60	411	
Coal blossom, No. 1 Pocahontas	1	412	61′
Shale, sandy, and concealed	60	472	
Mauch Chunk Series (223′)			
Shale, red	10	482	
Shale, sandy and concealed to creek (2500′ B.)	213	695	

The following aneroid section was obtained by Teets, in the western part of Mercer County, descending southward along county road from a point 0.5 mile east of Crystal, to a point on Crane Creek, 0.7 mile southeast of Crystal.

Section 0.7 Mile Southeast of Crystal, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.	
Pocahontas Group (330′)			
Shale, sandy, and concealed	31	31	
Coal, abandoned opening, **No. 3 Pocahontas**	4	35	35′
Shale, sandy	5	40	
Sandstone, massive	20	60	
Shale, slaty	3	63	
Coal blossom, No. 2 "A" Pocahontas	2	65	30′
Fire clay	2	67	
Shale, sandy	8	75	
Sandstone	40	115	
Shale, sandy	10	125	
Sandstone and sandy shale	35	160	
Shale, sandy	15	175	
Sandstone	20	195	

	Thickness. Feet.	Total. Feet.	
Shale, sandy, and sandstone	110	305	
Sandstone	25	330	
Mauch Chunk Series (45′)			
Concealed	35	365	
Shale, red (2230′ B.)	10	375	

An aneroid section was obtained by Teets in the western part of Mercer County, by descending westward along road from a high point, 0.5 mile almost due east of Mora to Mora, as follows:

Mora Section, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.	
New River Group (300′)			
Shale, sandy, and sandstone	66	66	
Coal blossom, Beckley	4	70	70′
Shale, sandy, and concealed	40	110	
Sandstone, **Quinnimont**, friable	40	150	
Shale, sandy, and concealed	40	190	
Sandstone and sandy shale	90	280	
Concealed, bench	20	300	
Pocahontas Group (350′)			
Sandstone, **Flattop Mountain**, massive, friable, coarse grained	39	339	
Coal blossom, No. 7 Pocahontas	1	340	270′
Shale, sandy	35	375	
Sandstone, **Pierpont**	25	400	
Shale, sandy	17	417	
Coal, impure, No. 6 Pocahontas	3	420	80′
Shale, sandy, and sandstone	150	570	
Shale	4-11	574-11	
Coal 1′ 2″ Bone 0 4 **Coal** 3 7 — **No. 3 Pocahontas**	5-1	580	160′
Shale, sandy, and sandstone	53	633	
Sandstone, massive	10	643	
Coal, good, No. 2 Pocahontas	2	645	65′
Shale and concealed (2315′ B.)	5	650	

An aneroid section obtained by Teets in the southwestern part of Mercer County, at forks of Mill Creek, 0.5 mile northwest of Coopers, descending eastward to Mill Creek at the forks, reads as follows:

Section 0.5 Mile Northwest of Coopers, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
Pocahontas Group (150′)					
Sandstone, **Upper Pocahontas**, massive	17	0	17	0	
Slate	2	8	19	8	
Coal 1′ 0″ / Sulphur band 0 1 / **Coal** 2 5 / Bone 0 3 / Sulphur 0 1 / **Coal** 5 1 / **Coal**, visible 0 6 — **No. 3 Pocahontas**	9	5	29	1	29′ 1″
Slate and concealed	49	2	78	3	
Coal, No. 2 Pocahontas	1	9	80	0	50′ 11″
Slate and concealed	10	0	90	0	
Sandstone, **Vivian**, massive, medium grained, buff colored	20	0	110	0	
Shale and concealed	20	0	130	0	
Sandstone, **Keystone**, massive, medium grained, buff colored (2325′ B.)	20	0	150	0	

An aneroid section obtained by Teets in the southwestern part of Mercer County, descending southeastward along road from a point in Flattop Mountain to Ruth, gives the following:

Ruth Section, Rock District, Mercer County.

	Thickness. Ft.	In.	Total. Ft.	In.	
New River Group (67′)					
Sandstone, slate and concealed	64	0	64	0	
Coal blossom, No. 8 Pocahontas	1	0	65	0	65′
Fire clay	2	0	67	0	
Pocahontas Group (273′)					
Sandstone, massive, coarse grained, **Flattop Mountain**	43	0	110	0	
Shale, sandy	10	0	120	0	
Sandstone	14	0	134	0	
Coal blossom, No. 7 Pocahontas	1	0	135	0	70′
Fire clay	1	0	136	0	
Sandstone, massive	19	0	155	0	
Shale, sandy	4	4	159	4	
Coal blossom	0	8	160	0	25′
Shale	2	0	162	0	
Sandstone, **Pierpont**, massive, coarse grained, friable	28	0	190	0	
Shale, sandy	8	0	198	0	
Coal, No. 6 Pocahontas, impure	2	0	200	0	40′
Fire clay	2	0	202	0	
Shale, sandy, and sandstone	28	0	230	0	
Sandstone, **Eckman**	40	0	270	0	
Shale, sandy	9	6	279	6	
Coal, No. 5 Pocahontas	0	6	280	0	80′

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale		2	0	282	0	
Sandstone, Upper Pocahontas, massive		35	0	317	0	
Slate		3	2	320	2	
Coal .....0′ 10″						
Sulphur band.0 1						
Coal 2 7	No. 3					
Bone 0 3	Pocahontas....	9	10	330	0	50′
Coal 5 0						
Sulphur band.0 1						
Coal 1 0						
Shale (2400′ B.)		10	0	340	0	

The following aneroid section was measured by Teets in the southwestern part of Mercer County, by descending south eastward along county road from a high point just northwest of Bramwell:

Bramwell Section, Rock District, Mercer County.

Pocahontas Group (450′)	Thickness. Feet.	Total. Feet.	
Shale, sandy, and sandstone	13	13	
Coal blossom, No. 6 Pocahontas	2	15	15′
Shale, sandy	10	25	
Sandstone, massive, coarse grained, gray, friable	25	50	
Shale, sandy, and concealed	8	58	
Coal, No. 5 Pocahontas, impure	2	60	45′
Sandstone, massive	20	80	
Shale, sandy, and concealed	8-2	88-2	
Coal, No. 4 Pocahontas, fair	1-10	90	30′
Fire clay	2	92	
Sandstone, Upper Pocahontas, massive	68	160	
Shale, sandy, and concealed	20	180	
Coal blossom, No. 3 Pocahontas	5	185	95′
Shale, sandy, and sandstone	39	224	
Coal blossom, No. 2 "A" Pocahontas	1	225	40′
Fire clay	2	227	
Sandstone	7	234	
Coal blossom, No. 2 Pocahontas	1	235	10′
Fire clay	2	237	
Shale, sandy, and concealed	23	260	
Sandstone, Vivian, massive	40	300	
Shale, sandy, and slaty	4-8	304-8	
Coal blossom, No. 1 Pocahontas	0-4	305	70′
Shale, sandy	10	315	
Sandstone	10	325	
Shale, sandy, and concealed	10	335	
Sandstone, flaggy, ferriferous	40	375	
Slate, dark	1	376	
Shale, gray	14	390	
Slate, dark	2	392	
Shale, gray	8	400	
Slate, dark	4	404	

	Thickness. Feet.	Total. Feet.	
Slate, dark	1	405	
Shale, gray	5	410	
Shale	2	412	
Shale, gray, dark streaks	3	415	
Shale, sandy	4-10	419-10	
Coal, Simmons	0-2	420	115′
Shale, gray	10	430	
Shale, dark, slaty	3	433	
Shale, limy	2	435	
Concealed to Bluestone River (2240′ B.)	15	450	

The intervals in the lower portion of this section are too great owing to the fact that the section was measured to the dip.

An aneroid section obtained by Teets in the western part of Mercer County, descending southeastward along county road from a point on the west side of Bluestone River, about 1.2 miles west of Flipping Station, to Bluestone River, reads as follows:

Section 1.2 Miles Southwest of Flipping, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (225′)		
Shale, sandy, and concealed	54.5	54.5
Shale, dark	0.5	55
Shale, sandy	10	65
Sandstone	10	75
Shale, gray	9	84
Slate, **North Fork**, marine fossils	1	85
Shale, sandy	19	104
Shale, dark, slaty	1	105
Shale, sandy, and concealed	15	120
Shale, sandy, and sandstone	65	185
Concealed, bench	15	200
Shale, sandy, and concealed	25	225
Mauch Chunk Series (245′)		
Shale, red	5	230
Shale, sandy	5	235
Shale, red	5	240
Shale, sandy, and sandstone	30	270
Shale, red	20	290
Shale, sandy	10	300
Shale, red	30	330
Shale, sandy	10	340
Shale, sandy, and sandstone	100	440
Sandstone, **Princeton**, conglomerate, to bed of Bluestone River (2220′ B.)	30	470

An aneroid section obtained in the western part of Mercer County, descending southward along county road from a point about one mile north of Montcalm to Montcalm, gives the following:

Montcalm Section, Rock District, Mercer County.

Mauch Chunk Series (460′)	Thickness. Feet.	Total. Feet.
Shale, sandy	27	27
Shale, red	3	30
Shale, sandy, and sandstone	95	125
Sandstone	10	135
Shale, sandy	5	140
Shale, red, dark	7	147
Sandstone	3	150
Shale, gray	5	155
Shale, red	5	160
Shale, yellow	20	180
Shale, sandy, and sandstone	10	190
Shale, red	40	230
Shale, sandy	10	240
Shale, red	70	310
Sandstone	27	337
Shale, red	3	340
Sandstone	45	385
Shale, sandy, and sandstone	35	420
Sandstone, massive, to railroad at Montcalm	40	460

This section was taken to the rise and the intervals are too small.

An aneroid section obtained by Teets in the western part of Mercer County, descending southward along county road from a point on ridge, about one mile south of Matoaka, to Godfrey Branch of Widemouth Creek of Bluestone River, reads as follows:

Section 2 Miles South of Matoaka, Rock District, Mercer County.

Pocahontas Group (300′)	Thickness. Feet.	Total. Feet.	
Shale, sandy	9	9	
Coal blossom, No. 3 Pocahontas "Rider"	1	10	10′
Fire clay	2	12	
Sandstone, **Upper Pocahontas**, massive, friable, coarse grained	20	32	
Coal blossom, No. 3 Pocahontas	3	35	25′
Fire clay	1	36	

	Thickness. Feet.	Total. Feet.	
Shale, sandy, and concealed	49	85	
Sandstone, **Vivian**, massive	50	135	
Shale, sandstone, and concealed	15	150	
Sandstone, **Landgraff**, massive	25	175	
Shale, sandy	20	195	
Fire clay	2	197	
Sandstone, **Keystone**, massive	28	225	
Shale, sandy	14.5	239.5	
Coal blossom, Simmons (0′ 6″)	0.5	240	205′
Shale, sandy, and sandstone	35	275	
Shale, sandy, and concealed to creek (2410′ B.)	25	300	

An aneroid section obtained by Teets in the western part of Mercer County, descending from a point on the west side of Widemouth Creek, just above the mouth of Godfrey Branch, descending eastward from slope to Widemouth Creek, gives the following:

Section 3 Miles Southeast of Matoaka, Rock District, Mercer County.

	Thickness. Feet.	Total. Feet.
Pocahontas Group (200′)		
Sandstone, sandy shale, and concealed	50	50
Concealed, bench	15	65
Sandstone, **Upper Pocahontas**	55	120
Concealed, bench	30	150
Sandstone	25	175
Concealed, bench	10	185
Sandstone	15	200
Mauch Chunk Series (110′)		
Slate, red	10	210
Sandstone	10	220
Shale, red and green, limy	10	230
Sandstone, reddish	3	233
Shale, red	7	240
Sandstone	30	270
Shale, red	20	290
Shale and concealed (elevation, 2260′ B.)	20	310

An aneroid section obtained in the western part of Mercer County by Teets, descending southwestward along county road from a point 1.2 miles northeast of Matoaka, to a point just east of Matoaka, exhibits the following:

Matoaka Section, Rock District, Mercer County.

Pocahontas Group (530′)	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy, and concealed	20	0	20	0	
Sandstone, **Pierpont**, massive, coarse grained, friable	39	6	59	6	
Coal blossom, No. 5 Pocahontas	0	6	60	0	60′
Fire clay and gray shale	5	0	65	0	
Shale, sandy	24	6	89	6	
Coal blossom, No. 4 Pocahontas	0	6	90	0	30′
Fire clay	2	0	92	0	
Shale, sandy	38	0	130	0	
Sandstone, **Upper Pocahontas**, massive	30	0	160	0	
Shale, sandy, and sandstone	30	0	190	0	
Coal blossom, No. 3 Pocahontas	5	0	195	0	105′
Slate, gray	5	0	200	0	
Shale, sandy, and concealed	25	0	225	0	
Sandstone, **Lower Pocahontas**	35	0	260	0	
Shale, sandy, and concealed	18	6	278	6	
Coal blossom, No. 2 Pocahontas	1	6	280	0	85′
Fire clay	2	0	282	0	
Shale, sandy	8	0	290	0	
Sandstone, **Vivian**, massive	75	0	365	0	
Shale, sandy, and slate	4	4	369	4	
Coal blossom, Landgraff	0	8	370	0	90′
Fire clay	2	0	372	0	
Shale, sandy	18	0	390	0	
Sandstone	10	0	400	0	
Shale, sandy, and sandstone	30	0	430	0	
Slate, dark	1	0	431	0	
Shale, sandy	29	0	460	0	
Shale, dark, slaty	1	0	461	0	
Shale, sandy	34	0	495	0	
Sandstone and concealed to Widemouth Creek (2340′ B.)	35	0	530	0	

Summarized Records

Map No.	NAME	DISTRICT	OWNER	Elevation A. T.
1	Four States C. & C. Co.	Clear Fork	Four States C. & C. Co.	930B
2	Leonard Storer	Clear Fork	Crawford & Ashby	1570B
3	Isaiah Goode	Clear Fork	Isaiah Goode	1720B
4	M. S. Dameron	Marsh Fork	F. B. Hawkins	1710B
5	M. S. Dameron	Marsh Fork	Swisher et al	1665B
6	E. J. Berwind 4-B	Town	E. J. Berwind	1897.1L
7	McKinley Land Co	Town	McKinley Land Co	1730B
8	McKinley Land Co	Town	McKinley Land Co	1660B
9	McKinley Land Co	Town	McKinley Land Co	1690B
10	McKinley Land Co	Town	McKinley Land Co	1790B
11	McKinley Land Co	Town	McKinley Land Co	1680B
12	McKinley Land Co	Town	McKinley Land Co	1655B
13	McKinley Land Co	Town	McKinley Land Co	1660B
14	McKinley Land Co	Town	McKinley Land Co	1785B
15	McKinley Land Co	Town	McKinley Land Co	1710B
16	E. J. Berwind "C"	Town	E. J. Berwind	1786.05L
17	E. J. Berwind, B-2	Town	E. J. Berwind	2003.22L
18	Price Hill Fuel Co. No. 4	Town	New River Co	2119L
19	Price Hill Fuel Co. No. 5	Town	New River Co	1854.38L
20	Price Hill Fuel Co. No. 6	Town	New River Co	2234.36L
21	Price Hill Fuel Co. No. 7	Town	New River Co	2348.57L
22	Price Hill Fuel Co. No. 9	Town	New River Co	2285.61L
23	Price Hill Fuel Co. No. 8	Town	New River Co	2281.48L
24	McKinley Land Co	Town	McKinley Land Co	1770B
25	McKinley Land Co	Town	McKinley Land Co	1745B
26	McKinley Land Co	Town	McKinley Land Co	1740B
27	E. J. Berwind "A"	Town	E. J. Berwind	1717.02L
28	E. J. Berwind B-13	Town	E. J. Berwind	1735.19L
29	E. J. Berwind B-14	Town	E. J. Berwind	1734.67L
30	E. J. Berwind No. 29	Town	E. J. Berwind	1875.85L
31	McKinley Land Co. No. 4	Town	McKinley Land Co	1797.52L
32	E J. Berwind B-22	Town	E. J. Berwind	1808.9L
33	E. J. Berwind No. 27	Town	E. J. Berwind	1914.39L
34	E. J. Berwind B-24	Town	E. J. Berwind	1826.39L
35	McKinley Land Co. No. 5	Town	McKinley Land Co	1874.91L
36	McKinley Land Co. B-5	Town	McKinley Land Co	1779.76L
37	Enoch Smith, 20-B	Town	McKinley Land Co	2035.45L
38	E. J. Berwind, 15-B	Town		1756.67L
39	E. J. Berwind, B-21	Town	E. J. Berwind	1816.81L
40	McKinley Land Co	Town	McKinley Land Co	1820B
41	E. J. Berwind, B-18	Town	E. J. Berwind	2020.19L
42	E. J. Berwind, B-17	Town	E. J. Berwind	1914.77L
43	E. J. Berwind 1A	Town	E. J. Berwind	1815.9L
44	E. J. Berwind, No. 6	Town	E. J. Berwind	1900.87L
45	E. J. Berwind No. 7	Town	E. J. Berwind	1889.07L
46	McKinley Land Co. No. 1	Town	McKinley Land Co	1934.43L
47	McKinley Land Co. No. 2	Town	McKinley Land Co	1985.6
48	McKinley Land Co. No. 3	Town	McKinley Land Co	1948.48L
49	Crab Orchard C. & L. Co. No. 5	Town	New River Collieries Co	2370B
50	Crab Orchard C. & L. Co. No. 13	Town	New River Collieries Co	2157L
51	Beaver Coal Co. No. 1	Town	Beckley C. & C. Co	2325B
52	Beaver Coal Co. No. 2	Town	Beckley C. & C. Co	2325B
53	Beaver Coal Co. No. 3	Town	Beckley C. & C. Co	2320B
54	Mabscott C. & C. Co	Town	New River Co	2310B
55	Mabscott C. & C. Co	Town	New River Co	2310B
56	Mabscott C. & C Co	Town	New River Co	2310B
57	Davis Heirs No. 80	Town	New River Col. Co	2264L
58	Davis Heirs No. 77	Town	New River Col. Co	2207L
59	Davis Heirs No. 76	Town	New River Col. Co	2266B
60	Davis Heirs No. 79	Town	New River Col. Co	2233L
61	Davis Heirs No. 78	Town	New River Col. Co	2298L
62	Crab Orchard C. & L. Co. No. 5	Town	New River Col. Co	2284L
63	Rock House Fork Land Co. No. 3	Town	Rock House Fork Land Co	2165.6L
64	Beaver Coal Co. No 3	Town	E. E. White Coal Co	2168.8L
65	Beaver Coal Co	Town	W. C. Reynolds	2168.2L
66	Beaver Coal Co. No. 2	Town	E. E. White C. Co	2174L
67	Beaver Coal Co	Town	E. E. White C. Co	2199.5L
68	Beaver Coal Co	Town	E. E. White C. Co	2331.3L
69	Beaver Coal Co	Town	I. C. Prince	2344.1L
70	Beaver Coal Co. No. 1	Town	John Laing	2390B
71	Beaver Coal Co. No. 2	Town	H. W. Althouse	2314L
72	Beaver Coal Co. No. 1	Town	H. W. Althouse	2297.5L

of Tests for Coal.

Sewell Coal		Beckley Coal		Fire Creek Coal		Pocahontas No. 6 Coal		Pocahontas No. 4 Coal		Pocahontas No. 3 Coal		Pocahontas No. 2 Coal		Total	Map
Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth	No.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	900	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
440	4.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	939	5
403	6.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	411.3	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
253.5	2.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
279.5	5.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300.2	16
454	9.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	536	17
461.5	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	470.5	18
135.0	5.0	.....	.....	438.8	0.9	563.4	1.4	.....	.....	.....	.....	.....	.....	628	19
499.8	5.0	724	2.7	830.8	0.5	952	0.1	1000.2	0.5	.....	.....	.....	.....	1000.2	20
577	4.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	582.7	21
455	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	461	22
459.8	4.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	465.5	23
357.3	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	377	24
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
193.8	8.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	203	27
197.5	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	238	28
169.5	7.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	180.8	29
300.5	6.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	331	30
264.1	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	293.3	31
231.5	10.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	307.5	32
303.4	2.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	356.9	33
247	18.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	277.5	34
283	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	290	35
200	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	207.3	36
444.2	3.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	453.4	37
190.8	7.9	430	5.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	442.3	38
206.5	8.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	217.4	39
220.4	4.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	252.5	40
383	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	639.8	41
282.8	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	333.5	42
145	0.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	246	43
215.5	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	223	44
172.6	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	495.2	45
225.1	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	252.5	46
244	4.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	251	47
197	4.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200	48
477.5	.....	716.7	5.3	802.5	1.9	878.9	3.9	.....	.....	1022.4	13.9	.....	.....	1039.9	49
281.6	7.0	547	7.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	599.2	50
306.5	4.5	515	0.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	594	51
199	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	435.8	52
130.1	4.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	138.3	53
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
60	5.5	270.7	0.5	272.2	2 3	.....	.....	.....	.....	.....	.....	.....	.....	375	57
.....	.....	162	6.8	285.5	2.3	.....	.....	.....	.....	.....	.....	.....	.....	290	58
.....	.....	339.7	2.4	334.8	1.7	.....	.....	.....	.....	.....	.....	.....	.....	339	59
.....	.....	183.2	2.6	297.7	2.2	.....	.....	.....	.....	.....	.....	.....	.....	302	60
.....	.....	247.5	.....	358.2	2.8	.....	.....	.....	.....	.....	.....	.....	.....	363.2	61
199.9	0.2	480.9	9.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	490.7	62
36.8	2.7	287.1	9.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	298.2	63
30.5	1.7	282.7	10.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	285	64
24	1.4	271.2	9.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	285.2	65
.....	.....	229.6	5.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	238.1	66
.....	.....	173.7	6.1	.....	.....	465.6	2.5	.....	.....	575.6	3.3	.....	.....	580.5	67
.....	.....	267.6	5.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	274	68
33	1.3	259.1	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	270.6	69
4	2.0	297.9	4.3	347.3	3.4	.....	.....	.....	.....	584.6	3.8	.....	.....	590	70
.....	.....	191.7	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	271	71
.....	.....	93.3	3.7	232.9	8.0	.....	.....	423.6	3.7	.....	.....	.....	.....	433	72

Summarized Records

Map No.	NAME	DISTRICT	OWNER	Elevation A. T.
73	Beaver Coal Co. No. 3	Town	H. W. Althouse	2287.2L
74	Beaver Coal Co. No. 4	Town	H. W. Althouse	2478.3L
75	E. J. Berwind, B-7	Town	E. J. Berwind	1858.67L
76	E. J. Berwind, B-11	Town	E. J. Berwind	1879.13L
77	Enoch Smith No. 23	Town	E. J. Berwind	2112.64L
78	E. J. Berwind, B-12	Town	E. J. Berwind	1822.82L
79	E. J. Berwind, B-9	Town	E. J. Berwind	1822.82L
80	E J. Berwind, B-6	Town	E. J. Berwind	1865.41L
81	E. J. Berwind, B-8	Town	E. J. Berwind	1833.52L
82		Town	New River Co	2126.22L
83	Beaver Coal Co. No. 14	Town	Bailey Wood Co	
84	E. H. Daniel No. 2	Trap Hill	I. E. Goode	840B
85	W. G. Daniel No. 3	Trap Hill	I. E. Goode	1865B
86	W. P. Shumate	Trap Hill	Smith et al	1740B
87	Crock Mankin	Trap Hill	Gibson et al	1925B
88	John Poteet	Trap Hill		1890B
89	Rock House Fork Land Co. No. 7	Trap Hill	Rock House Fork Land Co	1950B
90	Rock House Fork Land Co No. 5	Trap Hill	Rock House Fork Land Co	1950B
91	Rock House Fork Land Co	Trap Hill	Rock House Fork Land Co	1980B
92	Crab Orchard C. & L. Co. No. 3	Trap Hill	New River Col. Co	2021.0L
93	Crab Orchard C. & L. Co. No. 20	Trap Hill	New River Col. Co	2005.4L
94	Crab Orchard C. & L. Co. No. 12	Trap Hill	New River Col. Co	2114.2L
95	Crab Orchard C. & L. Co. No. 11	Trap Hill	New River Col. Co	2050B
96	Crab Orchard C. & L. Co. No. 30	Trap Hill	New River Col. Co	2118B
97	Crab Orchard C. & L. Co. No. 28	Trap Hill	New River Col. Co	2210B
98	Crab Orchard C. & L. Co. No. 29	Trap Hill	New River Col. Co	2099L
99	Crab Orchard C. & L. Co. No. 18	Trap Hill	New River Col. Co	2094.8L
100	Crab Orchard C. & L. Co. No. 27	Trap Hill	New River Col. Co	2176L
101	Crab Orchard C. & L. Co. No. 26	Trap Hill	New River Col. Co	2107L
102	Crab Orchard C. & L. Co. No. 2	Trap Hill	New River Col. Co	2093L
103	Crab Orchard C. & L. Co. No. 21	Trap Hill	New River Col. Co	2083.7L
104	Crab Orchard C. & L. Co. No. 23	Trap Hill	New River Col. Co	2019.8L
105	Crab Orchard C. & L. Co. No. 25	Trap Hill	New River Col. Co	2086.4L
106	Crab Orchard C. & L. Co. No. 24	Trap Hill	New River Col. Co	2150.6L
107	Crab Orchard C. & L. Co. No. 7	Trap Hill	New River Col. Co	2099L
108	Crab Orchard C. & L.Co. No. 19	Trap Hill	New River Col. Co	2103.8L
109	Crab Orchard C. & L. Co. No. 10	Trap Hill	New River Col. Co	2159L
110	Crab Orchard C. & L.Co. No. 32	Trap Hill	New River Col. Co	2085.7L
111	Crab Orchard C. & L. Co. No. 1	Trap Hill	New River Col. Co	2074L
112	Crab Orchard C. & L. Co. No. 6	Trap Hill	New River Col. Co	2112L
113	Crab Orchard C. & L. Co. Nos. 16 and 17	Trap Hill	New River Col. Co	2182L
114	Crab Orchard C. & L. Co. No. 9	Trap Hill	New River Col. Co	2146.0L
115	Crab Orchard C. & L. Co. No. 28	Trap Hill	New River Col. Co	2128.5L
116	Crab Orbhard C. & L. Co. No. 31	Trap Hill	New River Col. Co	2325.9L
117	Crab Orchard C. & L. Co. No. 15	Trap Hill	New River Col. Co	2210B
118	Beaver Coal Co	Trap Hill		
119	Beaver Coal Co	Trap Hill		2025B
120		Trap Hill		
121	Beaver Coal Co	Trap Hill		2040B
122	Beaver Coal Co	Trap Hill		2100B
123	Beaver Coal Co	Trap Hill		2150B
124	Beaver Coal Co	Trap Hill		2012B
125	Crab Orchard C. & L. Co. No. 8	Trap Hill	New River Col. Co	1913L
126	Rock House Fork Land Co. No. 2	Trap Hill	Rock House Fork Land Co	1930L
127	Rock House Fork Land Co. No. 6	Trap Hill	Rock House Fork Land Co	1938.7
128	Rock House F'k L. Co. No. 4 "A"	Trap Hill	Rock House Fork Land Co	2001.32L
129	Rock House Fork Land Co. No. 1	Trap Hill	Rock House Fork Land Co	2045.3
130	Rock House Fork Land Co. No. 4	Trap Hill	Rock House Fork Land Co	2049.7L
131	J. W. Moore et al	Trap Hill	J. W. Moore et al	2072L
132	Rock House Fork L. Co. No. 3A	Trap Hill	Rock House Fork Land Co	2051.7L
133	Rock House Fork L. Co. No. 2A	Trap Hill	Rock House Fork Land Co	2099.2L
134	Crab Orchard C. & L. Co. No. 14	Trap Hill	New River Col. Co	1973L
135	Crock Mankin No. 1	Trap Hill		1925B
136	J. W. Moore et al	Slab Fork	J. W. Moore et al	2127.2L
137	J. W. Moore et al	Slab Fork	J. W. Moore et al	2082.6L
138	Beaver Coal Co	Slab Fork	Rangland et al	2110B
139	Beaver Coal Co. No. 1	Slab Fork	Slab Fork C. & C. Co	1986L
140	Beaver Coal Co. No. 7	Slab Fork	Slab Fork C. & C. Co	
141	Beaver Coal Co. No. 6	Slab Fork	Slab Fork C. & C. Co	2077.1
142	Beaver Coal Co. No. 5	Slab Fork	Slab Fork C. & C. Co	2049.65L
143	Beaver Coal Co. No. 9	Slab Fork	Slab Fork C. & C. Co	2228L
144	Beaver Coal Co. No. 10	Slab Fork	Slab Fork C. & C. Co	2146L
145	Beaver Coal Co. No. 13	Slab Fork	Slab Fork C. & C. Co	2374L

of Tests for Coal.

Sewell Coal		Beckley Coal		Fire Creek Coal		Pocahontas No. 1 Coal		Pocahontas No. 4 Coal		Pocahontas No. 3 Coal		Pocahontas No. 2 Coal		Total	Map
Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ess	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth	No.
.....	.....	59.6	5.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	122.4	73
.....	.....	154.6	5.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	295	74
256.2	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	273	75
271	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	277	76
528	6.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	537	77
235.3	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	241.4	78
228.3	4.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	235	79
272.5	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	278.5	80
240.3	5.2	468	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	476.5	81
434.2	0.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	462	82
.....	.....	55.7	3.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	155.4	83
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	84
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	85
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	167	86
309	1.5	565.8	4.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	576.8	87
329.5	1.2	620.5	4.9	.....	.....	.....	.....	.....	.....	941	7.8	.....	.....	948.8	88
363.3	1.7	650.4	5.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	657.6	89
.....	.....	266.1	2.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	437	90
74	1.5	375.5	7.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425	91
286.5	8.3	380.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	588.8	92
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	550	93
281.2	10.5	536.8	10.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	556.5	94
179.7	5.4	449.5	7.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	458	95
267.4	4.4	531	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	542.7	96
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97
239.3	8.8	505.3	9.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	516	98
223.2	5.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	242.5	99
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
208.8	6.0	458.7	6.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	473.6	101
179.2	10.3	423.8	7.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	433.2	102
137.6	8.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	549.4	103
192.2	9.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	483.7	104
171.3	9.2	442.4	8.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	451.2	105
224.2	14.4	521.5	10.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	555.6	106
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	107
180	4.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	474.5	108
177.7	5.3	460.9	6.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	469.2	109
127	6.8	416.4	11.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	432.25	110
84.7	5.4	390.3	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	461.8	111
128.7	2.7	424.4	3.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	765.5	112
198	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200	113
99.1	2.5	424.6	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	460.3	114
252.3	5.3	505.7	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	543.3	115
254.7	3.0	478.7	0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	617	116
176.4	?	447.2	9.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	165.8	117
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	121
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	122
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	123
122.2	1.1	325.5	3.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	651.3	124
132.5	1.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	574.5	125
79.3	2.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	558.5	126
92.7	3.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	367.3	127
47.7	0.5	293.8	3.3	360.0	1.7	.....	.....	.....	.....	.....	.....	.....	.....	365.0	128
.....	.....	228.7	7.3	260	5.3	.....	.....	.....	.....	.....	.....	.....	.....	272	129
.....	.....	248.5	1.7	313.1	3.2	.....	.....	.....	.....	.....	.....	.....	.....	318	130
.....	.....	254	?	319.2	?	.....	.....	.....	.....	.....	.....	.....	.....	365	131
.....	.....	177.9	3.0	236.7	4.2	.....	.....	.....	.....	.....	.....	.....	.....	242.2	132
.....	.....	228.7	1.3	325.2	3.1	566.3	2.8	607.2	0.8	669	1.0	.....	.....	700	133
365.2	0.4	650.1	0.4	739.2	23.0	.....	.....	.....	.....	.....	.....	.....	.....	765.5	134
.....	.....	581	2.0	.....	.....	.....	.....	795	5.0	900	7.0	.....	.....	2185	135
.....	.....	453.8	.....	.....	.....	.....	.....	.....	.....	776.8	3.6	.....	.....	.....	136
22	?	.....	.....	368	?	.....	.....	.....	.....	.....	.....	.....	.....	378	137
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	138
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	139
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	140
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	141
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	142
.....	.....	288.7	4.3	.....	.....	.....	.....	.....	.....	595	4.0	.....	.....	604	143
.....	.....	209.4	8.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	219	144
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	145

Summarized Records

Map No.	NAME	DISTRICT	OWNER	Elevation A. T.
146	Beaver Coal Co. No. 3	Slab Fork	Slab Fork C. & C. Co	
147	Beaver Coal Co. No. 4	Slab Fork	Slab Fork C. & C. Co	
148	Beaver Coal Co. No. 27	Slab Fork	Slab Fork C. & C. Co	
149	Beaver Coal Co. No. 12	Slab Fork	Slab Fork C. & C. Co	1960[illegible]
150	Beaver Coal Co. No. 11	Slab Fork	Slab Fork C. & C. Co	1868[illegible]
151	Beaver Coal Co. No. 8	Slab Fork	Slab Fork C. & C. Co	2083[illegible]
152	Maben & Hotchkiss No. 1	Slab Fork	Slab Fork C. & C. Co	2540[illegible]
153	Lynwinn Coal Co	Slab Fork	Lynwinn Coal Co	1730[illegible]
154	Piney Coking Coal Land Co No. 3	Slab Fork	Sprague et al	2240[illegible]
155	Piney Coking Coal Land Co. No. 2	Slab Fork	Sprague et al	1940[illegible]
156	Piney Coking Coal Land Co. No. 1	Slab Fork	Sprague et al	2460[illegible]
157	Western Poca. C. & L. Co. No. 2.	Slab Fork	Western Poca. C. & L. Co	2560[illegible]
158	New River Co. No. 1	Shady Spring	New River Co	17281
159	New River Co. No. 2	Shady Spring	New River Co	24401
160	Blue Jay Lumber Co	Shady Spring	Blue Jay Lumber Co	24701
161	Beaver Coal Co. No. 7	Shady Spring	T. N. Moredue	22251
162	Phillips	Shady Spring	W. H. Warner & Co	22251
163	Henry Massey	Shady Spring	W. H. Warner & Co	
164	K. & M. R. R. Co. No. 1	Shady Spring	K. & M. R. R. Co	26251
165	New River Coal Co. No. 1	Shady Spring	New River Col. Co	26601
166	New River Coal Co. No. 2	Shady Spring	New River Col. Co	24191
167	Beaver Coal Co	Shady Spring		25091
168				
169				
170	K. & M. R. R. Co. No. 2	Richmond	K. & M. R. R. Co	30201
171	K. & M. R. R. Co. No. 3	Richmond	K. & M. R. R. Co	26501
172	Huling et al. No. 1	Richmond	Huling et al	27601
173	Huling et al. No. 2	Richmond	Huling et al	28301
174	Huling et al. No. 3	Richmond	Huling et al	28051
175	Huling et al. No. 4	Richmond	**Huling et al**	27551
176	Huling et al. No. 5	Richmond	Huling et al	28101
177	Huling et al. No. 6	Richmond	Huling et al	28001
178	Huling et al. No. 7	Richmond	Huling et al	27951
179				
180				
181	Beaver Coal Co	Town	Bailey-Wood Coal Co	
182	McKinley Land Co	Town	McKinley Land Co	
183	Enoch Smith, B-19	Town	E. J. Berwind	
184	E. J. Berwind No. 29	Town	E. J. Berwind	
185	Beaver Coal Co. No. 4	Town	E. E. White	2169.
186				
187				
188				
189	Galego Land Co. No. 1	Fayette Co., Kanawha Dis.	Galego Land Co	12101
190	Plum Orchard C. & L. Co. No. 3.	Fayette Co., Fayetteville	Plum Orchard C. & L. Co	16991
191	Plum Orchard C. & L. Co	Fayette Co., Fayetteville	Plum Orchard C. & L. Co	16751
192	Plum Orchard C. & L. Co	Fayette Co., Fayetteville	Plum Orchard C. & L. Co	
193	Plum Orchard C. & L. Co. No. 1.	Fayette Co., Fayetteville	Plum Orchard C. & L. Co	
194	McKinley Land Co. No. 2	Fayette Co., Fayetteville	McKinley Land Co	1732.521
195	McKinley Land Co	Fayette Co., Fayetteville	McKinley Land Co	
196	McKinley Land Co	Fayette Co., Fayetteville	McKinley Land Co	16401
197	E. J. Berwind No. 25	Fayette Co., Fayetteville	E. J. Berwind	1676.3
198	E. J. Berwind, S .H	Fayette Co., Fayetteville	E. J. Berwind	
199	E. J. Berwind, B-3	Fayette Co., Fayetteville	E. J. Berwind	1877.71
200	Davis & Fudge No. 1	Fayette Co., Fayetteville	New River Co	1995.451
201	Davis & Fudge No. 2	Fayette Co., Fayetteville Dis.	New River Co	2058.131
202	Davis & Fudge No. 3	Fayette Co., Fayetteville Dis.	New River Co	18901
203	Smith Bros	Fayette Co., Fayetteville Dis.	New River Co	
204	Western Poca. C. & L. Co. No. 3.	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	1820.11
205	Western Poca. C. & L. Co. No. 4.	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	1823.81
206	Western Poca. C. & L. Co. No. 5.	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	1745.11
207	Western Poca. C. & L. Co. No. 8.	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	1837.61
208	Maben & Hotchkiss No. 4	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	17881
209	Western Poca. C. & L. Co. No. 7.	Wyom. Co., Slab Fork Dis.	Western Poca. C. & L. Co	
210				
211	Bolen No. 1	Fayette Co., Fayetteville Dis.	New River Co	16201
212	Plumorchard C. & L. Co	Fayette Co., Fayetteville Dis.	Plumorchard C. & L. Co	17151
213	Plumorchard C. & L. Co	Fayette Co., Fayetteville Dis.	Plumorchard C. & L. Co	1842.161
214	McKinley Land Co	Fayette Co., Fayetteville Dis.	McKinley Land Co	18711
215	Davis & Fudge	Fayette Co., Fayetteville Dis.	J. W. Davis	
216	McKinley Land Co, B-1	Fayette Co., Fayetteville Dis.	E. J. Berwind	1980.341
217				
218				
219				
220	W. N. Page	Wyom. Co., Slab Fork Dis.	W. N. Page	17651
221	Barker No. 1	Summers Co., Jumping Branch Dis.	Summers Oil & G. Co	15861
222	Griffith	Mercer Co., Rock District		

of Tests for Coal.

Sewell Coal		Beckley Coal		Fire Creek Coal		Pocahontas No. 1 Coal		Pocahontas No. 4 Coal		Pocahontas No. 3 Coal		Pocahontas No. 2 Coal		Total	Map
Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth (Top)	Thick-ness	Depth	No.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	146
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	533	151
241	3.4	525.7	3.8	.....	.....	.....	.....	42.5	0.5	107.2	3.6	153.8	1.2	330	152
.....	.....	.....	.....	.....	.....	.....	.....	269.7	0.2	333	4.5	.....	.....	340.5	153
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	154
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	101.6	2.4	.....	.....	106	155
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	331.1	2.9	.....	.....	340	156
.....	.....	47.8	.....	.....	.....	249.5	2.7	.....	.....	388.2	2.7	443.1	1.6	508	157
.....	.....	.....	.....	.....	.....	136.7	3.0	.....	.....	.....	.....	.....	.....	149.7	158
.....	.....	.....	.....	.....	.....	143.1	2.5	.....	.....	.....	.....	.....	.....	152.6	159
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	160
.....	.....	93.2	11.7	.....	.....	.....	.....	.....	.....	520.2	4.9	.....	.....	526	161
.....	.....	.....	.....	.....	.....	.....	.....	.....	3.2	321.6	3.2	439	0.2	500	162
.....	.....	.....	.....	.....	.....	.....	.....	112.3	0.2	207.0	4.5	281.7	1.3	300	163
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	164
.....	.....	101.5	1.3	225.7	3.1	.....	.....	.....	.....	.....	.....	.....	.....	530.6	165
.....	.....	163.3	0.8	279.7	2.3	.....	.....	.....	.....	.....	.....	.....	.....	342.7	166
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	167
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	168
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	169
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	170
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	171
.....	.....	72.5	1.1	179	0.8	.....	.....	.....	.....	.....	.....	.....	.....	302	172
.....	.....	.....	.....	199.4	4.3	.....	.....	.....	.....	.....	.....	.....	.....	299	173
.....	.....	.....	.....	96.8	0.3	.....	.....	.....	.....	.....	.....	.....	.....	202	174
.....	.....	53	1.0	149.6	5.0	.....	.....	.....	.....	.....	.....	.....	.....	156	175
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	215	176
.....	.....	.....	.....	197	2.6	.....	.....	.....	.....	.....	.....	.....	.....	201	177
.....	.....	.....	.....	88.3	0.6	.....	.....	.....	.....	.....	.....	.....	.....	283	178
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	179
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	180
.....	.....	286.6	7.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	295	181
201.7	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	800	182
488.4	2.0	709.6	4.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	723.4	183
174.5	6.6	417	7.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	427.5	184
.....	.....	257.2	10.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	268.8	185
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	186
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	187
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	188
29.2	0.8	262.5	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1000	189
405.5	3.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	445	190
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	191
287.0	2.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	954.3	192
362	3.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1215	193
281.8	4.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	317	194
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196
362	3.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	369.3	197
311.8	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	317.5	198
384.4	4.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	391	199
415	3.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	612.3	200
494	13.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	507.3	201
352	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	358	202
.....	.....	199.5	0.7	291.7	1.9	398.8	.....	.....	.....	.....	.....	.....	.....	406.4	203
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	204
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	205
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	206
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	207
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	388.2	2.7	.....	.....	.....	208
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	209
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	210
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	211
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	212
370.6	6.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	385.8	213
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	214
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	215
477.6	1.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	216
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	217
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	218
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	219
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	220
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2664	221
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	222

DIAMOND CORE TEST RECORDS.

In addition to the sections already given, a large number of Diamond Core Tests have been drilled throughout the central portion of Raleigh County to test the depth, thickness and quality of the lower coals. A large number of these records have been kindly furnished by the different companies making these tests, and these records will now be given by districts.

Clear Fork District.

The New River and Pocahontas Groups lie under water level in practically all of Clear Fork District, while the coals in the Kanawha Group are practically all exposed. Three core test holes have been drilled in this district. The record of **No. 1**, located at Dorothy, is included in the Dorothy Section, on page 51 of this volume. The **Leonard Stover No. 1 (2)**, on Clear Fork, 1.8 miles east of Clear Fork P. O., was drilled into the Sewell Coal, but no record of same was obtained The **Isaiah Goode No. 1 (3)**, on Sandlick Creek, 1.6 miles east of Dameron P. O., was reported drilled to the Sewell Coal, but the writer was unable to obtain its record.

Marsh Fork District.

Two diamond core test holes have been obtained in Marsh Fork District and these are located near its southern boundary.

M. S. Dameron Core Test (4).

Marsh Fork District, on Sandlick Creek, ⅛ mile east of Dameron P. O.; authority, E. S. Hawkins; completed, 1906; elevation, 1710′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	13	11	13	11
Slate and streaks of sandy slate	23	2½	37	1½
Sandy slate, streaks of sandstone	25	1	62	2½
Gray sandstone	2	3	64	5½
Sandy slate	0	7	65	0½
Gray sandstone	4	7	69	7½

		Thickness. Ft.	In.	Total. Ft.	In.
Sandy slate		0	8	70	3½
Gray sandstone		34	8½	105	0
Slate		36	9½	141	9½
Dark sandstone		1	0	142	9½
Coal ....0′ 3 ″					
Slate 0 9					
Bone and slate...0 2	Lower				
Fine dark sandstone 9 8	Douglas.	13	0½	155	10
Light sandy slate.1 4					
Coal 0 10½					
Light sand slate		0	10	156	8
Sandstone, streaks of slate		8	0	164	8
Sandstone		0	6	165	2
Sandstone, streaks of slate		1	0	166	2
Fine sandstone		4	11	171	1
Slate, streaks of sandstone		0	10	171	11
Slate		23	9	195	8
Coal		1	0	196	8
Slate		3	6	200	2
Slate, streaks of sandstone		13	10½	214	0½
Hard, fine sandstone		13	2½	227	3
Slate, streaks of sandstone		29	9	257	0
Slate		11	3	268	3
Coal ....0′ 3 ″					
Slate, streaks of bone 0 3½					
Coal 0 2½					
Bone 0 5½	Ilaeger ..	2	1	270	4
Slate 0 4½					
Coal 0 5					
Bone 0 1					
Fire clay		1	11	272	3
Hard gray sandstone		102	10½	375	1½
Slate, streaks of sandy slate		24	10½	400	0
Slate, streaks of sandstone		49	6	449	6
Slate		5	6	455	0
Sandstone		7	0	462	0
Slate		3	1	465	1
Sandstone		6	7	471	8
Coarse sandstone		5	7	477	3
Slate		0	9	478	0
Coal, Sewell		1	3	479	3
Fire clay and sandstone		7	5½	486	8½
Light slate		1	1½	487	10
Sandstone		27	8½	515	6½
Fine sandstone, streaks of slate		3	10	519	4½
Sandstone		33	6	552	10½
Gray sandstone, broken		67	4	620	2½
Hard, fine, gray, pebbly sandstone		4	4	624	6½
Slate, Little Raleigh Coal horizon		6	0	630	6½
Dark sandstone		1	0	631	6½
Sandstone		29	2½	660	9
Sandstone, dark streaks		6	4	667	1
Sandstone		15	6½	682	7½

		Thickness. Ft.	In.	Total. Ft.	In.
Coal .....0′ 3 ″ Slate with streaks of bone .....0 3 Sandstone .....1 10½ Slate .....0 7½ Bone and slate.....0 1 Coal 3 11	Beckley	7	0	689	7½
Slate		1	0	690	7½
Sandstone, streaks of sandy slate		3	2	693	9½
Sandstone		12	3½	706	1
Sandstone, streaks of slate		64	2½	770	3½
Slate, streaks of sandstone		2	4	772	7½
Hard, gray sandstone		3	4½	776	0
Slate, streaks of sandstone		1	6½	777	6½
Hard, gray sandstone		35	7	813	1½
Conglomerate		4	0	817	1½
Hard, gray sandstone		19	3½	836	5
Dark sandstone, streaks of sand slate		16	3	852	8
Gray sandstone		2	0	854	8
Slate		10	4½	865	0½
Coal, No. 8 Pocahontas		1	3	866	3½
Slate		3	8½	870	0
Sandstone		6	4	876	4
Sand slate		0	7	876	11
Sandstone, streaks of slate		3	5	880	4
Sandy slate		1	3½	881	7½
Sandstone		2	7	884	2½
Sandy slate		1	6	885	8½
Sandstone		1	10	887	6½
Dark sandstone, streaks of slate		6	9	894	3½
Fine sandstone		4	4	898	7½
Coarse sandstone		0	9½	899	5
Coal, No. 6 Pocahontas		0	10	900	3
Fire clay		0	7	900	10
Slate		15	9	916	7
Sandstone		20	7½	937	2½
Slate		13	9	950	11½
Black slate		0	3	951	2½
Sandy slate		2	11½	954	2
Hard, gray sandstone		1	10	956	0
Sandy slate		1	6	957	6
Hard, gray sandstone		2	8	960	2
Dark sandstone		2	11	963	1
Hard, gray sandstone		10	8	973	9
Hard, gray sandstone		6	1	979	10
Hard, gray sandstone, with seams and sandy slate		0	5½	980	3½
Coal, No. 3 Pocahontas		1	1½	981	5
Fire clay		2	9½	984	2½
Light, sandy slate		1	8	985	10½
Fine sandstone		7	10½	993	9
Sandy slate		15	10	1009	7
Fire clay		3	5	1013	0
Green sand slate		3	8	1016	8
Green sandstone to bottom		1	6	1018	2

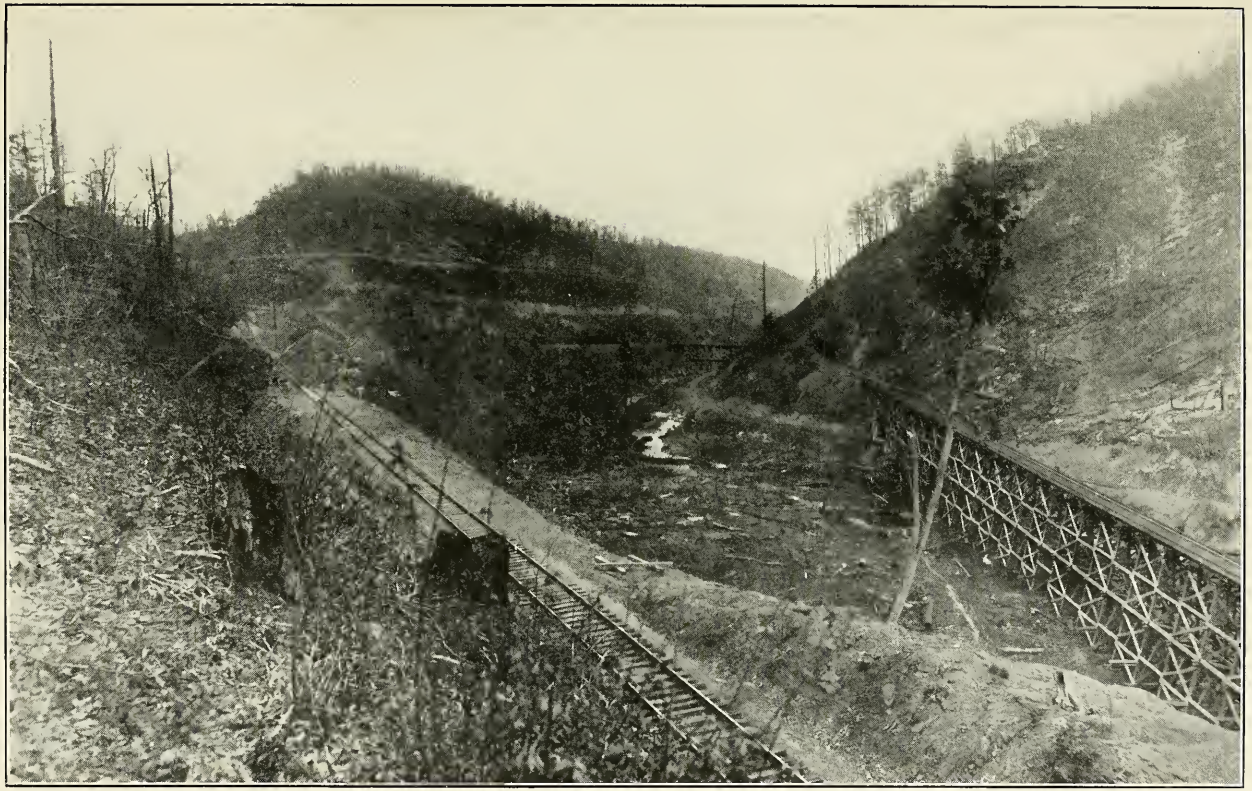

PLATE IX.—Virginian Railroad at Horseshoe Bend on Winding Gulf; showing New River Group.

L. C. Massey Core Test No. 1 (5).

Marsh Fork District, on Sandlick Creek, ½ mile east of Zada P. O.; authority, C. W. Swisher; completed, 1906; elevation, 1665' B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Yellow clay	11	0	11	0	
Sandstone	43	0	54	0	
Slate, dark	25	0	79	0	
Slate	1	0	80	0	
Sandstone with slate parting	39	0	119	0	
Shale	7	0	126	0	
Slate, sandy	31	0	157	0	
Hard lime shale	6	0	163	0	
Sandstone	3	0	166	0	
Shale, dark	1	0	167	0	
Slate, sandy	35	0	202	0	
Coal, Lower Iaeger	1	1	203	1	203' 1"
Sandstone	22	11	226	0	
Sandstone, slaty	12	0	238	0	
Sandstone with shale partings	16	0	254	0	
Sandstone	12	0	266	0	
Slate, dark	10	7	276	7	
Coal, slaty, Castle	1	8	278	3	75' 2"
Shale, dark	2	9	281	0	
Sandstone	18	0	299	0	
Sandstone with coal partings	29	0	328	0	
Sandstone	32	0	360	0	
Sandstone with shale partings	23	0	383	0	
Sandstone	12	0	395	0	
Shale, dark	17	0	412	0	
Shale	4	7	416	7	
Coal, Sewell "A"	1	0	417	7	139' 4"
Slate with hard bands	13	5	431	0	
Slate, dark	6	10	437	10	
Coal, Sewell	3	2	441	0	23' 5"
Slate, dark	16	0	457	0	
Slate, dark	10	8	467	8	
Slate, black	0	6	468	2	
Coal, Welch	1	3	469	5	28' 5"
Shale	6	7	476	0	
Sandstone .....61'					
Slate 1					
Sandstone .....24 } Upper Raleigh.	120	0	596	0	
Sandstone, hard..14					
Sandstone 20					
Slate, dark	5	0	601	0	
Slate, sandy	30	0	631	0	
Sandstone, **Lower Raleigh and Quinnimont**	130	0	761	0	
Sandstone with **coal** partings, **Fire Creek**	22	0	783	0	313' 7"
Sandstone	3	6	786	6	
Sand slate	2	6	789	0	
Sandstone to bottom	49	0	838	0	

Town District.

More than 80 Diamond Core Test holes have been drilled in Town District, in search of the New River and Pocahontas Coals, and some of these will now be given.

E. J. Berwind Core Test No. 4 (6).

Town District, on south side of Boyd Branch, 1.0 mile northeast from Cirtsville; authority, J. S. Cunningham; completed, June 2, 1909; elevation, 1897′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	22	0	22	0	
Sandstone	41	0	63	0	
Shale, dark	15	0	78	0	
Slate, black	23	0	101	0	
Sandstone	41	0	142	0	
Shale	7	6	149	6	
Shale, coal flakes	2	0	151	6	151′ 6″
Shale	1	0	152	6	
Hard sandstone	41	6	194	0	
Shale	2	0	196	0	
Hard rock	53	0	249	0	
Shale with sandstone partings	73	0	322	0	
Coal, Sewell "B"	0	3	322	3	170′ 9″
Fire clay	4	4	326	7	
Sandstone	46	5	373	0	
Shale, dark	16	6	389	6	
Slate, black	13	6	403	0	
Coal 0′ 1″ / Bone 0 1 / Coal 0 5 / Coal and bone 0 10 / Coal 4 11 } Sewell.	6	4	409	4	87′ 1″
Slate to bottom	2	0	411	4	

E. J. Berwind Core Test "C" (16).

Town District, on Sims Branch of Paint Creek, 1 mile southeast from Cirtsville P. O.; authority, J. S. Cunningham; completed, August, 1906; elevation, 1786.05′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	15	2	15	2
Sand slate	6	2	21	4

		Thickness. Ft. In.	Total. Ft. In.
Sandstone and slate 1′ 4″			
Sandstone 13 4			
Sandstone, black streaks 23 1	Harvey Conglomerate	78 6	99 10
Sandstone 21 7			
Sandstone and slate 2 0			
Sandstone 2 10			
Sandstone and slate 4 5			
Sandstone 9 11			
Slate		7 5	107 3
Sandstone and slate 6′ 1″			
Sand slate.....24 4			
Sandstone 1 6	Guyandot.	39 4	146 7
Sandstone and slate 1 8			
Sandstone 5 9			
Slate, sandy.....		40 1	186 8
Slate		1 2	187 10
Coal, Sewell "B".....		0 5	188 3
Fire clay.....		6 10	195 1
Sandy slate.....		4 10	199 11
Sandstone		14 1	214 0
Sandstone and slate.....		30 2	244 2
Sandy slate.....		19 4	263 6
Slate		5 10	269 4
Coal .....0′ 6″			
Slate and coal.....1 1			
Coal 4 4			
Core lost.....0 2	Sewell..	16 1	285 5
Coal and slate.....1 3			
Slate 7 4			
Coal 1 5			
Slate		2 8	288 1
Sand rock and sand slate.....		8 3	296 4
Core left in hole.....		3 10	300 2

The **E. J. Berwind Core Test "B"** (17) on Sims Branch of Paint Creek, 1.5 miles east from Cirtsville P. O., completed, May 11, 1909, is published on page 140 in the section ½ mile northwest of Nesco.

Price Hill Fuel Co. Core Test No. 4 (18).

Town District, on waters of Maple Fork of Sand Fork of Paint Creek, 1 mile west of Price Hill; authority, New River Company; completed, 1913; elevation, 2119′ L.

	Thickness. Ft. In.	Total. Ft. In.	
Surface	3 6	3 6	
Slate, soft.....	35 0	38 6	
Sandstone	42 8	81 2	
Coal, Lower Douglas.....	1 4	82 6	82′ 6″
Slate	8 0	90 6	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	20	0	110	6	
Slate	18	0	128	6	
Slate, dark	19	0	147	6	
Sandstone	50	0	197	6	
Slate, dark	17	0	214	6	
Coal, laeger	1	0	215	6	133′ 0″
Sandstone, light	35	0	250	6	
Shale, sandy	50	0	300	6	
Slate, dark	77	0	377	6	
Sandstone, light	40	0	417	6	
Slate, blue	7	0	424	6	
Sandstone	37	0	461	6	
Coal, Sewell	4	0	465	6	250′ 0″
Fire clay	5	0	470	6	

A core test hole was drilled in Price Hill Shaft by the New River Company at their operation on Dunloup Creek, the record of which is as follows:

Price Hill Core Test No. 5 (19).

Town District, on Dunloup Creek, at Price Hill; authority, New River Company; completed Dec. 15, 1913; elevation, top of shaft, 1854.90′ L.; elevation, top of drill hole, equals bottom of Sewell Coal, 1714.38′ L.

Sewell Coal.		Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay and slate		11	0	11	0	
Shale, blue		9	0	20	0	
Sandstone, very hard..... 10′ Shale, sandstone partings. 13 Sandstone, very hard.....217 Shale, sandstone partings. 20 Sandstone, hard, fine..... 18	Upper and Lower Raleigh... and Quinnimont	278	0	298	0	
Slate		0	7	298	7	
Shale, sandy		0	3	298	10	
Coal .....0′ 3″ Bone .....0 5 Coal 0 3	Fire Creek	0	11	299	9	299′ 9″
Shale, blue		43	8	343	5	
Slate		0	4	343	9	
Coal, Little Fire Creek		1	2	344	11	45′ 2″
Shale, blue		27	7	372	6	
Shale, sandstone partings		25	0	397	6	
Shale		2	0	399	6	
Shale, sandstone partings		14	0	413	6	
Sandstone		9	8	423	2	
Slate		0	3	423	5	
Coal, No. 9 Pocahontas		1	5	424	10	79′ 11″
Fire clay		0	9	425	7	
Shale, blue		56	0	481	7	
Shale, sandy		1	5	483	0	
Sandstone to bottom		5	0	488	0	

The Beckley coal appears to be absent in the above drilling, and the coal encountered at 299′ 9″ is very probably the **Fire Creek.**

Price Hill Core Test No. 6 (20).

Town District, on west side of Giles, Fayette and Kanawha Turnpike, 1.25 miles southwest of Price Hill; authority, New River Company; completed, March 4, 1914; elevation, 2234.36′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		10	0	10	0
Clay		2	0	12	0
Sandstone		24	0	36	0
Sandstone and shale mixed conglomerate		19	0	55	0
Shale		34	0	89	0
Shale and sandstone mixed		8	0	97	0
Sandstone ....39′ Shale and sandstone 37 Sandstone .....37 Shale and sandstone 49 Sandstone, conglomerate .....51′ Sandstone, ... 2 Sandstone, conglomerate .....26 Sandstone, hard..... 9 Sandstone, hard and conglomerate, mixed 8	Harvey Conglomerate	162 96	0 0	259 355	0 0
Shale, Sandy Huff		46	0	401	0
Sandstone, hard..... 4′ Sandstone, very hard .....35 Sandstone, very hard .....25 Sandstone, very hard, mixed with small seams of coal..20 Sandstone, very hard ..... 5 Sandstone 2	Guyandot....	91	0	492	0
Shale		7	8	499	8
Bone .....0′ 2″ Coal .....0 2 Bone .....0 8 Coal 4 2	Sewell.....	5	2	504	10
Shale		29	2	534	0
Sandstone		5	0	539	0
Shale		2	0	541	0

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, conglomerate ... 3 ′ Sandstone, very hard .....18 Sandstone, hard..16 Shale ..... 2 Sandstone, very hard ..... 2 Sandstone, hard..10 Sandstone, conglomerate, loose pebbles ..... 6 Sandstone 86⅓	Upper Raleigh.....	143	4	684	4	
Crevice		0	1	684	5	
Coal, Little Raleigh.....		0	2	684	7	179′ 9″
Sandstone, very hard ..... 1′ 5″ Sandstone ..... 4 0 Sandstone, conglomerate .. 2 0 Sandstone, very hard .....15 0 Shale ..... 3 0 Sandstone, very hard .....12 0 Sandstone, conglomerate .. 2 0	Lower Raleigh.....	39	5	724	0	
Coal, Beckley.....		2	8	726	8	42′ 1″
Sandstone, conglomerate .. 6′ 4″ Sandstone, very hard ..... 7 0 Shale .....18 0 Sandstone, very hard .....32 0 Sandstone, very hard, pregnated with small seams of coal $\frac{1}{16}$″ thick ..... 1 0 Sandstone, very hard 39 10	Quinnimont.	104	2	830	10	
Coal, Fire Creek.....		0	6	831	4	104′ 8″
Fire clay.....		1	8	833	0	
Shale		11	0	844	0	
Shale, sandy.....		33	0	877	0	
Sandstone, soft.....		43	0	920	0	
Sandstone, medium hard and broken..		5	0	925	0	
Red? and green shale and soft green sandstone		25	0	950	0	
Sandstone and shale with coal streaks		14	0	964	0	
Sandstone and shale.....		30	0	994	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	4	0	998	0	
Shale	2	2	1000	2	
Coal, No. 6 Pocahontas	0	5½	1000	7½	169′ 3½″
Sandstone and shale to bottom	1	6¼	1002	1¾	

The red shale at 925 feet is evidently an error of observation, probably resulting from oxidation of iron bearing shale before the core was described.

Price Hill Core Test Hole No. 7 (21).

Town District, on east side of Giles, Fayette and Kanawha Turnpike, 1.8 miles southeast of Price Hill; authority, New River Company; completed, March 23, 1914; elevation, 2348.57′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Clay		14	0	14	0
Sandstone, decomposed		19	0	33	0
Shale		53	0	86	0
Sandstone		32	0	118	0
Shale		26	0	144	0
Sandstone		58	0	202	0
Shale		43	0	245	0
Sandstone .....32′ Sandstone with small streaks of coal $\frac{1}{16}$″ thick, laeger..... 5 Sandstone and shale, mixed .....95 Sandstone, conglomerate .....18 Sandstone 8	Harvey...	158	0	403	0
Shale, **Sandy Huff**		88	0	491	0
Sandstone .....21′ Sandstone, and shale, with small seams of coal $\frac{1}{16}$″ thick.....12 Sandstone and shale...35 Sandstone 17	Guyandot.	85	0	576	0
Shale		1	0	577	0
Coal .....4′ 0 ″ **Coal** and bone, interlaminated .0 7½	Sewell....	4	7½	581	7½
Shale to bottom		1	0½	582	8

Price Hill Core Test No. 9 (22).

Town District, on west side of Old Bluestone Road, S. 13° W. 1.6 miles from Price Hill; authority, New River Company; completed, May 2, 1914; elevation, 2285.61′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Clay	12	0	12	0
Sandstone shale or sandy shale	47	0	59	0
Sandstone	10	0	69	0
Shale	63	0	132	0
Sandstone	37	0	169	0
Shale	19	0	188	0
Sandstone, conglomerate, **Harvey**	82	0	270	0
Shale, **Sandy Huff**	100	0	370	0
Sandstone, **Guyandot**	34	0	404	0
Shale	10	0	414	0
Sandstone	1	0	415	0
Shale, sandy	16	0	431	0
Sandstone	22	0	453	0
Shale, blue	2	0	455	0
Coal, Sewell	3	9	458	9
Fire clay to bottom	2	3	461	0

Price Hill Core Test No. 8 (23).

Town District, on west side of Giles, Fayette and Kanawha Turnpike, S. 18° W. 2.2 miles from Price Hill; authority, New River Company; completed, April 15, 1914; elevation, 2281.48′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Clay		14	0	14	0
Sandstone, decomposed		4	0	18	0
Sandstone		86	0	104	0
Shale		25	0	129	0
Sandstone		31	0	160	0
Sandstone and shale		31	0	191	0
Sandstone, conglomerate, **Harvey**		79	0	270	0
Shale		5	0	275	0
Sandstone and shale		19	0	294	0
Shale		67	0	361	0
Sandstone with small seams of coal $\frac{1}{16}$″ thick		5	0	366	0
Sandstone 22′ Shale 8 Sandstone and shale 9 Sandstone 43	**Guyandot**	82	0	448	0
Shale		11	9	459	9
Coal 3′ 9″ Bone and slate 0 3½ **Coal** 0 7½	**Sewell**	4.	8	464	5
Slate to bottom		1	1½	465	6½

Almost due west 4.5 miles, across Paint Creek, a number of Diamond Core Test Holes have been drilled to test the New River Coals, as follows:

McKinley Land Company Core Test (24).

Town District, on Laurel Branch of Paint Creek, S. 65° W. one mile from Maynor P. O.; completed, September, 1906; authority, John B. Laing; elevation, 1770′ B.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		10	0	10	0	
Slate and sand		32	11	42	11	
Sandstone		33	4	76	3	
Slate, soft		6	9	83	0	
Sand, slate and sandstone	22′ 7″					
Sandstone	1 4					
Slate, sandy	0 8					
Sandstone	3 6					
Slate, sandy	4 0					
Sandstone	5 0					
Sandstone and sandy slate	3 0					
Sandstone	5 0					
Sandstone and sandy slate	10 6					
Sandstone	26 10					
Sandstone and sandy slate	2 5					
Sandstone	5 2					
Sandy slate and sandstone	22 4	Harvey Conglomerate..	112	4	195	4	
Core lost		0	8	196	0	
Slate, sandy		21	1	217	1	
Coal and bone, Castle		0	4	217	5	217′ 5″
Slate, sandy	0′ 11″					
Sandstone	5 5					
Slate, sandy	51 5					
Sandstone	13 6	Guyandot.	98	7	316	0	
Sandstone and sandy slate	4 1					
Slate, sandy	23 3					
Coal, Sewell "A"		0	8	316	8	99′ 3″
Slate, sandy		31	8	348	4	
Coal	0′ 7″					
Coal and slate	0 4					
Slate, sandy	4 6	Sewell...	9	0	357	4	40′ 8″
Coal	0 2					
Core lost	3 5					
Slate, sandy		9	5	366	9	
Sandstone to bottom		10	3	377	0	

The foregoing core test shows the Sewell Coal broken up with slate and shale.

Rowland Land Company Core Test No. 1 (25).

Town District, on Laurel Branch of Paint Creek, S. 60° W. 0.6 mile from Maynor; authority, W. P. Edwards; elevation, 1725′ B.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		4	0	4	0	
Sandstone, shale parting.16′ Sandstone, hard, conglomerate .....66 Sandstone, conglomerate.30	Lower Nuttall	112	0	116	0	
Shale, blue, sandy		15	7	131	7	
Fire clay		0	8	132	3	
Shale, blue, sandy		17	4	149	7	
Slate, black		4	0	153	7	
Shale, blue, and sandstone		2	0	155	7	
Sandstone, hard, shale partings		17	2	172	9	
Shale, blue, sandy		17	10	190	7	
Shale, blue, sandy		14	10	205	5	
Slate, black		3	10	209	3	
Coal, Sewell "B"		0	10	210	1	210′ 1″
Slate and fire clay		2	10	212	11	
Sandstone, shale and fire clay partings		11	10	224	9	
Shale, blue, sandy		27	7	252	4	
Coal, Sewell "A"		2	3	254	7	44′ 6″
Shale, blue, sandy		21	5	276	0	
Slate and coal.....1′ 3″ Coal .....1 8½ Slate .....0 0½ Coal .....0 4 Slate .....1 9 Coal 1 4½	Sewell.	6	5½	282	5½	27′ 10½″
Slate		8	7½	291	1	
Fire clay		1	0	292	1	
Sandstone, soft, to bottom		5	0	297	1	

The Sewell Coal is broken up with slate and coal and appears impure at this point.

E. J. Berwind Core Test "A" (27).

Town District, on Sand Fork of Paint Creek, ¼ mile southeast of Maynor; completed, 1906; authority, J. S. Cunningham; elevation, 1717.02′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Casing		10	4	10	4	
Sandstone, very hard 30′ 9″ Sandstone, shale parting 9 3 Shale, sandstone parting 69 4 Shale, blue 3 0	Guyandot.	112	4	122	8	
Coal, Sewell "B"		0	8	123	4	
Shale, dark		4	2	127	6	
Sandstone, shale partings 17′ 3″ Sandstone, very hard 24 3 Shale, sandstone partings 6 2	Lower Guyandot.	47	8	175	2	
Shale, blue		20	7	195	9	
Coal 0′ 8″ Fire clay 0 7 **Coal** 2 10 Bone 0 7 **Coal** 2 3	Sewell...	6	11	202	8	79′ 4″
Slate with coal partings to bottom...		0	4	203	0	

E. J. Berwind Core Test "B" 13 (28).

Town District, on Sand Fork of Paint Creek, 0.3 mile southeast of Maynor; completed, February 8, 1910; authority, J. S. Cunningham; elevation, 1735.19′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		15	0	15	0
Sandstone, very hard		22	0	37	0
Shale, sandy		20	0	57	0
Fire clay		6	0	63	0
Shale, dark		70	0	133	0
Sandstone, **Lower Guyandot**		39	0	172	0
Shale, dark		22	0	194	0
Slate, black		3	6	197	6
Coal 2′ 0″ Slate 0 3 **Coal** 1 9 Slate 2 10 **Coal**, dirty 0 4	Sewell.	7	2	204	8
Slate		0	3	204	11
Slate with coal partings		0	6	205	5
Slate, blue		10	0	215	5
Coal, Welch		2	2	217	7

	Thickness. Ft.	In.	Total. Ft.	In.
Sandstone	4	0	221	7
Shale, dark, sandy	10	5	232	0
Sandstone to bottom	10	0	242	0

E. J. Berwind Core Test "B" 14 (29).

Town District, on Sand Fork of Paint Creek, 0.5 mile southeast of Maynor; completed, February 19, 1910; authority, J. S. Cunningham; elevation, 1734.67′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		8	0	8	0
Sandstone, very hard		8	0	16	0
Surface		12	0	28	0
Shale, dark		54	0	82	0
Fire clay		5	0	87	0
Shale, dark		40	0	127	0
Slate, black		6	0	133	0
Sandstone		17	0	150	0
Shale, dark		11	6	161	6
Slate, black		8	0	169	6
Coal 1′ 6″					
Slate 0 10					
Coal 2 9	Sewell.	10	6	180	0
Slate with coal flakes 0 3					
Coal 5 2					
Fire clay to bottom		0	10	180	10

The **E. J. Berwind Core Test "B" 29 (30)**, on Davis Branch of Paint Creek, 1.8 miles southwest of Maynor, is published on page 122 in the section for Sweeneyburg, 1.0 mile west, where the Sewell Coal appears to have deteriorated greatly.

McKinley Land Company Core Test No. 4 (31).

Town District, on Davis Branch of Paint Creek, 1.5 miles south of Maynor; authority, J. B. Laing; completed, September, 1906; elevation, 1797.52′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	11	0	11	0
Sandstone	0	8	11	8
Sandstone and slate	7	4	19	0
Slate	1	8	20	8
Core lost	2	9	23	5
Slate, sandy	28	6	51	11
Sandstone	20	4	72	3
Coal streaks	0	1	72	4
Sandstone and sandy shale	1	5	73	9

	Thickness. Ft.	In.		Total. Ft.	In.
Sandstone	7	4		81	1
Slate, sandy	4	11		86	0
Core lost	9	0		95	0
Slate, sandy	8	4		103	4
Sandy slate and sandstone	5	0		108	4
Sandstone	13	6		121	10
Slate, sandy	74	8		196	6
Sandstone	0	11		197	5
Slate, sandy	3	4		200	9
Sandstone	10	8		211	5
Slate, sandy	10	2		221	7
Core lost	1	3		222	10
Fire clay and shale	4	0		226	10
Slate, sandy	30	9		257	7
Slate, broken	1	7		259	2
Coal 0′ 3″					
Core lost, Coal? 2 1½					
Slate 1 8	Sewell.	4	11½	264	1½
Core lost, Coal? 0 11					
Sandstone and sandy shale	11	5½		275	7
Slate, sandy	1	1		276	8
Fire clay and shale	3	0		279	8
Sandstone	13	2		292	10
Core left in hole, to bottom	0	6		293	4

E. J. Berwind Core Test "B" 22 (32).

Town District, on Paint Creek, at mouth of Davis Branch, 1.4 miles south of Maynor; authority, J. S. Cunningham; completed, January 29, 1912; elevation, 1808.80′ L.

	Thickness. Ft.	In.		Total. Ft.	In.
Surface	17	0		17	0
Slate, black	10	0		27	0
Sandstone	4	0		31	0
Slate	4	0		35	0
Sandstone, very hard	35	0		70	0
Slate and sandstone partings	26	0		96	0
Shale, dark	79	0		175	0
Sandstone	1	0		176	0
Shale, dark	8	0		184	0
Sandstone	29	8		213	8
Slate, black	17	10		231	6
Coal 1′ 6″					
Slate 0 0½					
Coal 0 8					
Bone and streaked coal 3 7	Sewell.	10	2½	241	8½
Coal 1 0					
Slate and coal partings 1 0					
Coal 2 2					
Coal, bony 0 3					
Fire clay	5	11½		247	8

	Thickness. Ft.	In.	Total. Ft.	In.
Coal, Sewell "Split"	1	0	248	8
Fire clay	1	4	250	0
Sandstone	2	0	252	0
Shale	11	6	263	6
Shale, dark	5	0	268	6
Sandstone	25	0	293	6
Shale, dark	10	4	303	10
Sandstone, very hard, to bottom	3	8	307	6

The Sewell Coal is badly split up here.

The **E. J. Berwind Core Test "B" 27 (33),** on west side of Paint Creek, on Bailey Farm, 2.3 miles southwest of Maynor, completed September 10, 1912, is published on page 123 in the Section for Sweeneyburg P. O., one mile southwest.

This core test hole is located on the west side and near the headwaters of Paint Creek, and demonstrates that as far as tested, the Sewell Coal is impure on the west side of Paint Creek.

The **E. J. Berwind Core Test "B" 24 (34),** on the west side of Paint Creek on the J. H. Sweeney farm, 1.8 miles south of Maynor, completed July 11, 1912, is published on page 68 in the Section for Sweeneyburg. The Sewell Coal as shown in this boring contains a large amount of impurities.

McKinley Land Company Core Test No. 5 (35).

Town District, on east side of Paint Creek on J. Jidd's farm, 1.9 miles southeast of Maynor; authority, J. S. Cunningham; completed, July 2, 1910; elevation, 1874.91′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	30	0	30	0
Shale, dark	32	0	62	0
Sandstone, very hard	6	0	68	0
Shale, dark	16	0	84	0
Sandstone, very hard, Harvey	42	0	126	0
Shale, dark	14	0	140	0
Sandstone, very hard	8	0	148	0
Shale, dark	80	0	228	0
Slate	14	0	242	0
Slate, black	6	0	248	0
Sandstone	16	0	264	0
Slate, black	4	0	268	0
Coal 0′ 4″ Slate, black 4 0 Coal 0 6 (Sewell "Rider")	4	10	272	10

		Thickness. Ft.	In.	Total. Ft.	In.
Slate, black		9	8	282	6
Coal, bony ..... 0′ 6″	Sewell.	4	6	287	0
Coal 4 0					
Fire clay, black, to bottom		3	0	290	0

Here the Sewell Coal has lost its impurities and resumed its usual thickness.

McKinley Land Company Core Test B-5 (36).

Town District, on Sand Fork of Paint Creek on the Sandy Lafferty farm, 0.9 mile southeast of Maynor; authority, J. S. Cunningham; completed, August 18, 1909; elevation, 1779.76′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		18	0	18	0
Sandstone, very hard, Harvey		30	0	48	0
Shale, dark		91	6	139	6
Sandstone		1	0	140	6
Shale, dark		13	0	153	6
Sandstone		0	6	154	0
Slate, black		22	0	176	0
Fire clay, slaty		4	0	180	0
Sandstone, hard		7	0	187	0
Slate		4	6	191	6
Coal and bone ..... 0′ 3″					
Coal 0 8					
Slate 2 0	Sewell.	12	10	204	4
Coal 0 5					
Slate 5 0					
Coal (lost 7″) 4 6					
Fire clay to bottom		3	0	207	4

Enoch Smith Core Test B-20 (37).

Town District, on Maple Fork of Sand Fork, ½ mile south of Nesco; authority, J. S. Cunningham; completed, June 20, 1912; elevation, 2035.45′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		13	0	13	0
Shale		1	0	14	0
Sandstone ..... 69′ 6″					
Slate, black 34 8					
Sandstone 47 2	.....	264	8	278	8
Slate, black 18 6					
Sandstone and shale 17 4					
Sandstone, hard 77 6					
Shale, sandy		1	0	279	8
Shale, dark		9	6	289	2

	Thickness. Ft.	In.	Total. Ft.	In
Sandstone and shale	8	0	297	2
Slate, black	89	3	386	5
Sandstone	9	4	395	9
Shale, dark, sandy	1	3	397	0
Sandstone	1	0	398	0
Slate, black	17	6	415	6
Shale, dark, sandy	26	3	441	9
Shale, dark	2	6	444	3
Coal 2′ 3″ / Coal, bony 0 1½ / Coal 0 6½ / Coal, bony 0 3 (Sewell.)	3	2	447	5
Fire clay, hard, to bottom	6	0	453	5

E. J. Berwind Core Test B-15 (38).

Town District, on Sand Fork of Paint Creek, 0.5 mile southeast of Maynor; authority, J. S. Cunningham, completed, August 11, 1913; elevation, 1756.67′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	3	0	3	0	
Sandstone, very hard, Harvey	20	0	23	0	
Shale, dark	45	0	68	0	
Fire clay	6	0	74	0	
Shale, dark	70	0	144	0	
Sandstone	13	0	157	0	
Shale, dark	6	0	163	0	
Sandstone	6	0	169	0	
Shale, dark	5	0	174	0	
Slate, black	17	0	191	0	
Coal 1′ 0″ / Slate 0 10 / Coal 2 1 / Binder 0 1 / Coal 2 2 / Slate with coal flakes 0 11 / Coal 0 6 / Coal, bony 0 2 (Sewell.)	7	9	198	9	198′ 9″
Fire clay	1	3	200	0	
Shale, dark	20	0	220	0	
Sandstone, very hard, Upper Raleigh	126	0	346	0	
Coal, Little Raleigh	0	7	346	7	147′ 10″
Fire clay	1	5	348	0	
Sandstone	19	0	367	0	

PLATE X(a).—No. 6 Pocahontas Coal in railroad grade at Tams.

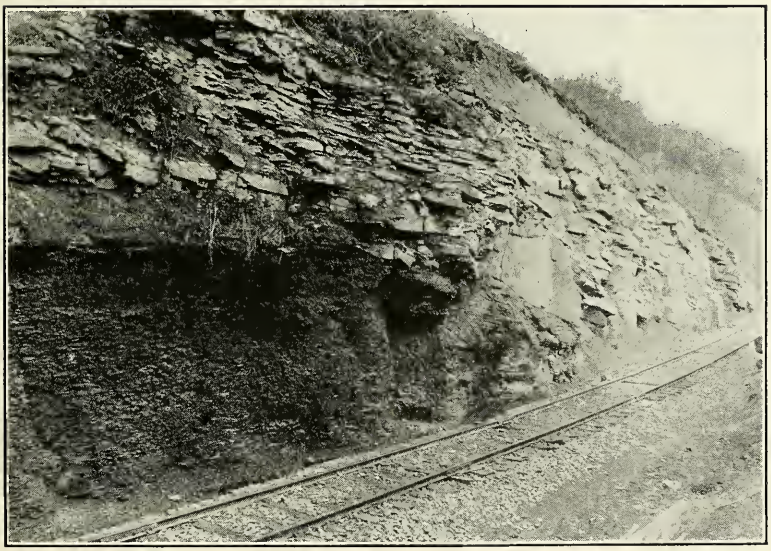

PLATE X(b).—Pocahontas Sandstone on Winding Gulf, west of Tams.

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark		30	0	397	0	
Sandstone		4	0	401	0	
Slate and shale		17	0	418	0	
Slate, dark		7	0	425	0	
Coal 0′ 9″ / Slate, dark 4 3 / Coal, bony 0 2 / Coal 0 6 / Coal, bony 1 4 / Coal 3 6	Beckley	10	6	435	6	88′ 11″
Sandy shale		2	6	438	0	
Sandstone to bottom		4	0	442	0	

E. J. Berwind Core Test "B" 18 (41).

Town District, on west side of Paint Creek, 0.8 mile west of Sweeneyburg; authority, J. S. Cunningham; completed, June 11, 1912; elevation, 2020.19′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		34	0	34	0	
Shale and sandstone partings		12	0	46	0	
Shale, dark		30	0	76	0	
Sandstone		40	4	116	4	
Shale, dark		15	0	131	4	
Slate, black		1	0	132	4	
Coal and sulphur		0	8	133	0	133′ 0″
Fire clay		5	0	138	0	
Sandstone, conglomerate.. 3′ / Sandstone, very hard....50	Harvey	53	0	191	0	
Shale and sandstone partings		19	6	210	6	
Shale		18	0	228	6	
Fire clay, hard		2	3	230	9	
Sandstone, hard		3	3	234	0	
Shale and sandstone partings		15	6	249	6	
Shale, dark		99	6	349	0	
Sandstone		18	0	367	0	
Shale		10	1	377	1	
Slate		4	11	382	0	
Slate		1	0	383	0	
Coal, bony 0′ 5″ / Coal 2 4 / Slate 0 8 / Coal 1 6 / Coal, bony 0 2 / Coal 0 6	Sewell.	5	7	388	7	255′ 7″
Fire clay, slaty		11	0	399	7	
Slate		19	5	419	0	
Sandstone, hard, Upper Raleigh		122	0	541	0	
Coal, Little Raleigh		0	1	541	1	152′ 6″
Fire clay		4	0	545	1	
Slate		18	0	563	1	
Sandstone		0	6	563	7	
Shale		7	0	570	7	

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone .....35′ 0″	Lower					
Shale 1 5	Raleigh	61	5	632	0	
Sandstone 25 0						
Coal .....2′ 8 ″						
Sulphur 0 0¼						
Coal and streaks....0 4½						
Bony streaks and coal 0 9½	Beckley	4	9¾	636	9¾	95′ 8¾″
Coal 0 2½						
Coal and bony streaks 0 3½						
Coal, hard.....0 5½						
Fire clay, slaty.....		1	11	638	8¾	
Sandstone to bottom.....		1	1	639	9¾	

The above core test shows both the **Sewell** and **Beckley Coals** to be impure at this point.

E. J. Berwind Core Test "B" 17 (42).

Town District, on the head of Paint Creek, on the H. H. Harper farm, 0.6 mile southwest of Sweeneyburg; authority, J. S. Cunningham; completed, April 25, 1912; elevation, 1914.77′ L.

		Thickness. Ft.	In.	Total. Ft.	In.
Surface		10	0	10	0
Sandstone, very hard.....		51	0	61	0
Shale		5	6	66	6
Fire clay		1	0	67	6
Sandstone, hard.....		20	6	88	0
Shale and sandstone partings.....		11	6	99	6
Shale, dark.....		88	6	188	0
Slate, black.....		30	4	218	4
Sandstone		4	6	222	10
Slate, black.....		4	6	227	4
Shale and sandstone.....		47	2	274	6
Slate, black.....		8	4	282	10
Fire clay, sandy, **Sewell Coal horizon**..		2	0	284	10
Sandstone .....40′ 0″					
Shale and sandstone partings 3 6	Welch	48	8	333	6
Sandstone, very hard, to bottom..... 5 2					

The above boring penetrates through the Sewell Coal horizon, but that coal bed is only represented by black slate.

E. J. Berwind Core Test 1-A (43).

Town District, on west side of Paint Creek, 0.3 mile southwest of Sweeneyburg; on Tract No. 20R.; authority, J. S. Cunningham; completed, May 6, 1910; elevation, 1813.11′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	20	0	20	0
Shale, dark	60	0	80	0
Fire clay	5	0	85	0
Sandstone	30	0	115	0
Shale, light, sandy	27	0	142	0
Slate, black	0	6	142	6
Coal, Sewell "A"	1	4	143	10
Fire clay	3	0	146	10
Slate, black	11	0	157	10
Coal, Sewell	0	1	157	11
Sandstone	7	0	164	11
Shale, dark	8	0	172	11
Sandstone .....38′ 0″				
Shale .....31 11 } Welch.	73	1	246	0
Sandstone to bottom.. 3 2				

The **Sewell Coal** is shown up to be thin and replaced by black slate in this boring.

E. J. Berwind Core Test No. 6 (44).

Town District, on the east side of Paint Creek, 0.4 mile south of Sweeneyburg, and about 1,000 feet southeast of boring 43; authority, J. S. Cunningham; completed, August 10, 1910; elevation, 1900.87′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	28	0	28	0
Sandstone, very hard, **Harvey**	41	0	69	0
Shale, dark	105	0	174	0
Slate, black	15	0	189	0
Sandstone	1	6	190	6
Slate	2	2	192	8
Shale, sandy	12	0	204	8
Sandstone	10	0	214	8
Slate, black	1	0	215	8
Coal, Sewell	4	0	219	8
Fire clay, black, to bottom	3	4	223	0

The Sewell Coal appears in its usual purity and normal thickness in the above boring, thus showing how quickly it becomes worthless northwestward of a certain line.

E. J. Berwind Core Test No. 7 (45).

Town District, on east side of Paint Creek on the Wilson farm, 0.5 mile south of Sweeneyburg; authority, J. S. Cunningham; completed, Nov. 4, 1913; elevation, 1889.07′ L.

	Thickness.		Total.		
	Ft.	In.	Ft.	In.	
Surface	12	0	12	0	
Shale, dark	129	0	141	0	
Sandstone	4	8	145	8	
Shale	13	4	159	0	
Sandstone	13	4	172	4	
Slate, black	0	3	172	7	
Coal, Sewell	4	0	176	7	176′ 7″
Fire clay	2	5	179	0	
Shale, sandstone partings	32	0	211	0	
Shale, dark	5	0	216	0	
Sandstone	0	6	216	6	
Shale	1	0	217	6	
Sandstone	4	0	221	6	
Shale, dark	5	0	226	6	
Fire clay	4	6	231	0	
Shale, light	3	0	234	0	
Sandstone	2	0	236	0	
Shale	1	0	237	0	
Sandstone	0	8	237	8	
Shale, sandstone partings	4	4	242	0	
Sandstone	5	0	247	0	
Shale	2	0	249	0	
Sandstone, very hard, **Raleigh**	161	0	410	0	
Coal, Beckley	0	2	410	2	233′ 7″
Sandstone, hard 0′ 6″ Sandstone 13 0 Shale 0 5 Sandstone 12 6 Sandstone, conglomerate 1 9 Sandstone 11 0	**Quinnimont**	39	2	449	4	
Coal, Fire Creek	0	2	449	6	39′ 4″
Sandstone	1	0	450	6	
Shale, sandstone partings	2	0	452	6	
Sandstone	4	0	456	6	
Shale, sandy	1	3	457	9	
Sandstone	23	0	480	9	
Shale, light	1	6	482	3	
Sandstone	7	0	489	3	
Shale, sandy, dark, to bottom	6	0	495	3	

The **Sewell Coal** appears to be normal in regard to its purity and thickness, while the Beckley and Fire Creek Coals are thin and worthless, thus following the general law that the higher coal beds extend farther to the northwest than the lower.

McKinley Land Company Core Test No. 1 (46).

Town District, on west side of Paint Creek, 0.5 mile west of Rooker School; completed, 1906; authority, J. B. Laing; elevation, 1934.43′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	12	2	12	2
Sandstone	8	0	20	2
Core lost and crevices	11	0	31	2
Sandstone and sandy shale	9	2	40	4
Core lost (broken up)	6	0	46	4
Sandstone	7	0	53	4
Sandstone and sandy slate	1	3	54	7
Core lost	2	0	56	7
Sandstone and sandy slate	10	0	66	7
Slate, sandy	124	1	190	8
Sandstone	15	9	206	5
Slate	2	7	209	0
Core lost	0	4	209	4
Slate	11	3	220	7
Coal and slate ..... 0′ 3″				
Slate 0 5				
Coal ..... 0 4 } **Sewell.**	5	10	226	5
Slate 0 8				
Coal 2 10				
Core lost 1 4				
Slate, soft	0	7	227	0
Slate	1	1	228	1
Sandstone and sandy slate	15	0	243	1
Slate, sandy	8	8	251	9
Core in hole, to bottom	0	9	252	6

McKinley Land Company Core Test No. 2 (47).

Town District, on west side of Paint Creek, 0.4 mile southwest of Rooker School; authority, J. S. Cunningham; completed, May 20, 1910; elevation, 1985.60′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	30	0	30	0
Sandstone, very hard, **Harvey**	70	0	100	0
Shale, dark	13	0	113	0
Sandstone	3	0	116	0
Shale, dark	23	0	139	0
Sandstone	4	0	143	0
Shale, dark	49	0	192	0
Sandstone	3	0	195	0
Fire clay	1	6	196	6
Slate, black	20	6	217	0
Sandstone, hard	13	0	230	0
Slate, black	14	0	244	0
Coal, Sewell	4	8	248	8
Fire clay to bottom	2	4	251	0

McKinley Land Company Core Test No. 3 (48).

Town District, on Lick Branch of Paint Creek, on the Godbey farm, 0.4 mile southeast of Rooker School; authority, J. S. Cunningham; completed, June 2, 1910; elevation, 1948.48′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	25	0	25	0
Sandstone, very hard, **Harvey**	15	0	40	0
Shale, dark	70	0	110	0
Slate, black	8	0	118	0
Coal	0	3	118	3
Slate	3	0	121	3
Sandstone	13	0	134	3
Slate	5	0	139	3
Shale, sandy	23	0	162	3
Sandstone	7	0	169	3
Shale, dark	12	0	181	3
Sandstone	3	0	184	3
Shale, dark	1	0	185	3
Sandstone	3	9	189	0
Slate, black	4	0	193	0
Coal, Sewell	4	7	197	7
Fire clay, black, to bottom	2	5	200	0

Southeast from Paint Creek, on the waters of Whitestick, a number of core tests have been drilled, as follows:

Crab Orchard Coal & Land Co. Core Test No. 4 (49).

Town District, on waters of Whitestick Creek, one mile northwest of Cabell; authority, New River Collieries Co.; elevation, 2370′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	7	6	7	6	
Sandstone, **Panther**	29	3	36	9	
Shale, sandstone partings	55	7	92	4	
Shale, blue	1	1	93	5	
Coal, Iaeger "B"	1	1	94	6	94′ 6″
Fire clay	3	2	97	8	
Sandstone, **Upper Iaeger**	56	3	153	11	
Slate, black	9	6	163	5	
Coal, bony 0′ 2″ / **Coal** 0 11 — **Iaeger.**	1	1	164	6	70′ 0″
Fire clay	1	4	165	10	
Sandstone, **Lower Iaeger**, very hard	55	8	221	6	
Shale, sandstone partings	21	6	243	0	
Sandstone, very hard 118′ 6″ / Sandstone, soft. 20 4 / Sandstone, very hard 1 2 — **Harvey Conglomerate and Guyandot**	140	0	383	0	
Shale, sandstone partings	17	5	400	5	
Shale, blue	11	2	411	7	
Coal, Sewell "B"	0	10	412	5	247′ 11″

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay	2	4	414	9	
Shale, sandstone partings .....12′ 6″ / Sandstone, soft....26 5 / Shale, blue, sandy..19 7 — Lower Guyandot.	58	6	473	3	
Shale, blue	3	9	477	0	
Coal, Sewell	4	6	481	6	69′ 1″
Fire clay	0	7	482	1	
Slate, brown	0	9	482	10	
Slate, black	3	1	485	11	
Coal, Sewell "Split"	1	2	487	1	
Shale, black	1	0	488	1	
Shale, sandy, gray	3	0	491	1	
Shale, brown, sandy	12	3	503	4	
Shale, brown	8	6	511	10	
Core lost	2	0	513	10	
Shale, sandy, brown	13	9	527	7	
Coal .....0′ 8″ / Bone .....0 6 — **Welch "A"**	1	2	528	9	
Shale, sandy, brown	1	6	530	3	
Sandstone	2	6	532	9	
Shale, black	4	2	536	11	
Coal, Welch	1	10	538	9	57′ 3″
Shale, sandy, brown	2	6	541	3	
Shale, sandy, gray	25	9	567	0	
Shale, black	5	5	572	5	
Shale, brown	22	6	594	11	
Shale, sandy, brown	12	5	607	4	
Sandstone, gray	4	8	612	0	
Shale, sandy, brown	3	0	615	0	
Shale, sandy, gray	13	5	628	5	
Sandstone	6	8	635	1	
Shale, sandy	1	3	636	4	
Shale, sandy, brown	15	3	651	7	
Sandstone	41	1	692	8	
Sandstone, flint	2	11	695	7	
Shale, black	6	10	702	5	
Shale	0	10	703	3	
Sandstone, flint	10	3	713	6	
Sandstone	3	4	716	10	
Coal .....3′ 3″ / Slate, seams of coal...2 0 — **Beckley**	5	3	722	1	183′ 3″
Fire clay and slate	2	10¾	724	11¾	
Sandstone .....28′ 1¼″ / Slate .....19 6 / Sandstone .....22 5 — Quinnimont..	70	0¼	795	0	
Broken slate	7	6½	802	6½	
Coal, Fire Creek	1	11	804	5½	82′ 4½″
Fire clay	1	1½	805	7	
Fire clay, slate and shale	0	8	806	3	
Shale, streaks of sandstone	16	2	822	5	
Shale, sandy	4	2	826	7	
Shale and fire clay	4	4	830	11	
Coal, bony, Little Fire Creek	0	2	831	1	26′ 7½″
Fire clay, sand, slate, streaks of sandstone	14	6	845	7	

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandy slate and streaks of sandstone.		24	4	869	11	
Slate		9	0	878	11	
Coal .....0′ 10½″						
Slate, bony.....0 7½	No. 9					
Coal and bony	Pocahontas	3	11	882	10	51′ 9″
slate 0 9						
Coal and bony						
slate 1 8						
Slate and sandstone		9	3	892	1	
Sandstone and sandy slate		8	1	900	2	
Sandstone, Flattop Mountain		47	0	947	2	
Coal and bone, No. 7 Pocahontas		0	2	947	4	64′ 6″
Slate, sandy		12	6	959	10	
Sandstone		4	9	964	7	
Slate, sandy		17	3	981	10	
Sandstone, Eckman		40	3	1022	1	
Slate		0	2	1022	3	
Slate		1	2	1023	5	
Coal .....1′ 2″						
Core lost.....1 0						
Coal and bone.1 4						
Slate 3 8	No. 3 or No. 4					
Coal 1 6	Pocahontas....	13	11	1037	4	89′ 0″
Core lost.....0 7						
Slate 3 8						
Coal 0 2						
Slate and coal.0 10						
Fire clay		1	3	1038	7	
Sandstone		1	2	1039	9	

The foregoing boring extends through to the Pocahontas No. 3 Coal, or possibly Nos. 4 and 3 combined.

Crab Orchard Coal & Land Co. Core Test No. 13 (50).

Town District, on waters of Whitestick Creek, 0.8 mile northwest of Cabell, and 0.4 mile southwest of Core Test Hole No. 4 (49); authority, New River Collieries Co.; elevation, 2100′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		4	6	4	6	
Sandstone		31	6	36	0	
Sandstone and shale		35	3	71	3	
Sandstone		6	0	77	3	
Fire clay		0	3	77	6	
Sandstone, Harvey Conglomerate and Guyandot		105	1	182	7	
Slate		0	2	182	9	
Sandstone		7	5	190	2	
Slate		64	4	254	6	
Coal .....0′ 11″	Sewell "A"	1	2	255	8	
Bone and coal.....0 3						

		Thickness. Ft.	In.	Total. Ft.	In.	
Slate		1	3	256	11	
Sandstone		11	10	268	9	
Slate		0	7	269	4	
Sandstone		10	0	279	4	
Slate		0	9	280	1	
Sand and slate		1	3	281	4	
Slate		0	3	281	7	
Bone	0′ 2″					
Slate, broken	0 8					
Bone	0 7	Sewell.	7	0	288	7	32′ 11″
Slate	0 3					
Coal (lost core)	5 4					
Slate		6	0	294	7	
Sulphur		0	6	295	1	
Sandstone and slate	8′ 3″					
Sandstone	23 0					
Slate	1 4	Welch.	41	6	336	7	
Sandstone	1 11					
Slate	3 0					
Sandstone	4 0					
Slate		13	0	349	7	
Slate, black		10	0	359	7	
Bone, Welch		0	3	359	10	71′ 3″
Slate		18	6	378	4	
Sandstone, **Upper Raleigh**		84	9	463	1	
Coal	0′ 4″					
Bone	0 4					
Coal	0 1					
Sand and slate	1 6					
Sandstone	2 9	Little				
Fire clay	0 8	Raleigh	11	1	474	2	114′ 4″
Slate	4 9					
Coal	0 6					
Slate	0 1					
Coal	0 1					
Slate		0	2	474	4	
Sandstone	42′ 6″					
Slate	4 8					
Sandstone and slate	1 0	Lower Raleigh	72	8	547	0	
Slate and sandstone	1 6					
Slate	0 5					
Sandstone	22 7					
Coal	7′ 3″	Beckley	7	7	554	7	80′ 5″
Bone	0 4					
Sandy slate		4	0	558	7	
Sandstone		9	8	568	3	
Slate		0	8	569	11	
Slate, sandy		5	3	575	2	
Sandstone to bottom		24	0	599	2	

Both the Sewell and Beckley Coals appear in their normal thickness and purity in the above boring, separating interval being 266′ 5″.

Beaver Coal Company Core Test No. 1 (51).

Town District, on north bank of Whitestick Creek, on tract No. 89, near Cabell; authority, W. M. MacTaggart; completed, 1903; elevation, 2325′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	12	0	12	0	
Sandstone and clay	72	0	84	0	
Sandstone	36	0	120	0	
Slate, dark, **Castle Coal horizon**	2	0	122	0	122
Sandstone, **Guyandot**	98	0	220	0	
Slate, dark	40	0	260	0	
Fire clay	4	0	264	0	
Sandstone, **Lower Guyandot**	27	0	291	0	
Slate, dark	15	6	306	6	
Coal, Sewell	4	6	311	0	189
Slate, dark	1	0	312	0	
Shale, dark	10	0	322	0	
Sandstone	16	0	338	0	
Shale, dark	7	0	345	0	
Slate, dark	3	0	348	0	
Shale, dark	3	0	351	0	
Fire clay	4	0	355	0	
Slate, dark	19	0	374	0	
Fire clay	6	0	380	0	
Shale, dark	6	0	386	0	
Sandstone, hard	34	0	420	0	
Coal and slate, **Little Raleigh**	1	0	421	0	110
Shale, dark	3	0	424	0	
Sandstone 8′ / Shale, dark 67 / Sandstone 14 — **Lower Raleigh Sandstone**	89	0	513	0	
Slate, dark	2	0	515	0	
Coal, Beckley	0	1	515	1	94′ 1″
Slate	0	9	515	10	
Fire clay	4	2	520	0	
Shale, dark	28	0	548	0	
Sandstone, **Quinnimont**, to bottom	46	0	594	0	

The boring was not deep enough to reach the Fire Creek Coal which would be found at about 636 feet.

Beaver Coal Company Core Test No. 2 (52).

Town District, on north bank of Whitestick Creek, 0.6 mile southeast of Cabell P. O.; authority, W. M. MacTaggart; completed, 1903; elevation, 2325′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	10	0	10	0
Sandstone, hard, **Guyandot**	96	0	106	0
Shale, dark	47	0	153	0
Sandstone	17	0	170	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark	3	0	173	0	
Sandstone	15	0	188	0	
Shale, dark	11	0	199	0	
Coal, Sewell	4	4	203	4	203′ 4″
Fire clay	3	8	207	0	
Shale	3	0	210	0	
Shale, dark	45	0	255	0	
Fire clay	4	0	259	0	
Shale, dark	25	0	284	0	
Slate, dark	5	0	289	0	
Sand and dark slate mixed	43	0	332	0	
Sandstone, hard	21	0	353	0	
Dark shale and slate	30	0	383	0	
Shale, dark	10	0	393	0	
Bone and coal, Beckley "A"	0	5	393	5	
Shale, dark	25	1	418	6	
Coal, Beckley	1	9	420	3	216′ 11″
Shale, dark	3	0	423	3	
Fire clay	1	2	424	5	
Shale, dark	1	5	425	10	
Sandstone to bottom	10	0	435	10	

Beaver Coal Company Core Test No. 3 (53).

Town District, on north side of Whitestick Creek, near Wickham; authority, W. M. MacTaggart; completed, 1913; elevation, 2320′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	8	0	8	0
Sandstone, hard	4	0	12	0
Slate and shale	27	0	39	0
Coal, bony, Sewell "B"	0	8	39	8
Shale, dark	54	3	93	11
Sandstone	21	2	115	1
Shale, dark	5	0	120	1
Coal, Sewell	14	6	134	7
Shale, dark, to bottom	3	9	138	4

Lanark is northeast from Wickham about five miles, and there several core tests have been drilled by the New River Collieries Company, on the property of the Davis Heirs, as follows:

Davis Heirs Core Test No. 80 (57).

Town District, on Stanaford Branch of Piney Creek, 0.7 mile northwest of Lanark P. O.; authority, New River Collieries Company; elevation, 2264.0′ L.; published on page 30 of Volume II(A) of the Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	5	0	5	0	
Sandstone, **Lower Guyandot**	42	0	47	0	
Shale, sandy	13	0	60	0	
Coal 4′ 8″ / Coal and slate 0 10 — Sewell	5	6	65	6	65′ 6″
Fire clay	1	8	67	2	
Sandstone and shale	30	0	97	2	
Slate, dark	0	6	97	8	
Fire clay	2	6	100	2	
Sandstone 14′ / Sandy shale 4 / Sandstone 64 — Upper Raleigh	82	0	182	2	
Shale, dark 6′ 6″ / Shale, sandy 3 0 / Shale, dark 3 0 / Sandstone 64 0 — Lower Raleigh	76	6	258	8	
Shale, dark	12	0	270	8	
Coal and slate, **Beckley**	0	6	271	2	205′ 8″
Shale, sandy 3′ 0″ / Sandstone 65 0 / Shale, dark, sandy 8 0 / Sandstone 10 0 — Quinnimont	86	0	357	2	
Slate, dark	4	6	361	8	
Slate, black	10	6	372	2	
Coal, Fire Creek	2	4	374	6	103′ 4″
Fire clay to bottom	0	6	375	0	

The above core test hole began 65½′ above the base of the **Sewell Coal** and extends through the Fire Creek, thus giving important data in regard to the intervals between the Sewell, Beckley and Fire Creek seams in this region.

Davis Heirs Core Test No. 77 (58).

Town District, at Lanark P. O.; authority, New River Collieries Co.; elevation, 2207.0′ L.; published on page 27, of Volume II(A) of Survey.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	6	0	6	0	
Sandstone, hard 22′ 0″					
Soapstone 2 6					
Sandstone, hard 16 0					
Sandstone, hard, and coal spars 10 0					
Sandstone, hard.17 0 — Upper Raleigh ..	75	6	81	6	
Sandstone, hard, and coal spars 2 0					
Sandstone, hard 3 0					
Sandstone, hard, and coal spars 3 0					
Coal, bony .... 0′ 1″ — Little					
Slate, black.... 1 8 — Raleigh ..	1	9	83	3	83′ 3″
Shale, sandy	10	0	93	3	
Sandstone and shale .....17′ 0″					
Sandstone .....48 0 — Lower Raleigh ..	68	0	161	3	
Sandstone and coal spars.. 3 0					
Slate	0	9	162	0	
Coal ... . 1′ 7″					
Slate and coal spars..... 2 6 — Beckley.....	6	10	168	10	85′ 7″
Coal 2 9					
Fire clay	3	8	172	6	
Soapstone	19	0	191	6	
Shale, light	13	6	205	0	
Sandstone, Quinnimont	45	0	250	0	
Shale, dark, Quinnimont	35	6	285	6	
Coal, Fire Creek	2	4	287	10	119′ 0″
Fire clay to bottom	2	2	290	0	

Davis Heirs Core Test No. 76 (59).

Town District, ¼ mile northeast of Lanark P. O.; authority, New River Collieries Company; elevation, 2266.0′ L.; published on page 26 of Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	6	0	6	0
Shale, brown	3	0	9	0
Soapstone	10	0	19	0
Sandstone and shale	9	0	28	0

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, hard ... 52′ Soapstone ..... 2 Sandstone, hard... 12 Sandstone, hard, and coal spars. 12	Upper Raleigh...	84	0	112	0	
Shale, dark, sandy		8	5	120	5	
Coal and slate, Little Raleigh		1	2	121	7	121′ 7″
Fire clay		3	2	124	9	
Shale, light, sandy		15	0	139	9	
Shale, light		9	3	149	0	
Sandstone ..... 70 Sandstone and coal spars 5	Lower Raleigh...	75	0	224	0	
Shale, dark		6	4	230	4	
Coal, Beckley		2	5	232	9	111′ 2″
Fire clay		4	3	237	0	
Soapstone		9	0	246	0	
Shale, light		12	0	258	0	
Sandstone ..... 30′ Sandstone and coal spars 8	Quinnimont.	38	0	296	0	
Shale, Quinnimont, dark		38	10	334	10	
Coal, Fire Creek		1	8	336	6	
Fire clay to bottom		2	6	339	0	

Davis Heirs Core Test Hole No. 78 (60).

Town District, on west side of Piney Creek, 0.8 mile northeast of Lanark P. O.; authority, New River Collieries Company; elevation, 2298′ L.; published on page 28, Volume II(A), of Survey Reports.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		3	0	3	0	
Sandstone, hard... 85′ Sandstone, hard, and coal spars 4 Sandstone, hard... 48	Upper Raleigh...	137	0	140	0	
Shale, dark, sandy		7	0	147	0	
Coal, dirty, Little Raleigh		0	8	147	8	147′ 8″
Fire clay		4	4	152	0	
Sandy shale		13	0	165	0	
Sandstone .....17′ 6″ Sandstone and coal spars.. 4 0 Sandstone 43 0	Lower Raleigh....	64	6	229	6	
Slate, dark		10	0	239	6	
Shale, dark		4	0	243	6	
Fire clay, Beckley Coal horizon		4	0	247	6	99′ 10″
Soapstone		20	6	268	0	
Shale, light, sandy .....17′ 6″ Sandstone .....20 0 Shale, sandy.... 7 9 Sandstone 6 6	Quinnimont	51	9	319	9	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark, sandy, **Quinnimont**	31	6	351	3	
Slate, black	7	0	358	3	
Coal, Fire Creek	2	10	361	1	113′ 7″
Fire clay to bottom	2	2	363	3	

Davis Heirs Core Test No. 79 (61).

Town District, ½ mile northwest of Lanark Station and 0.4 mile northeast of No. 78 (60); authority, New River Collieries Co.; elevation, 2233.0′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	8	0	8	0	
Sandstone, **Upper Raleigh**, hard	85	0	93	0	
Slate, black	0	2	93	2	
Coal, bony, **Little Raleigh**	0	1	93	3	93′ 3″
Soapstone	13	0	106	3	
Sandstone ..... 55′ Sandstone and coal spars ..... 22 } **Lower Raleigh**	77	0	183	3	
Coal, Beckley	2	7	185	10	92′ 7″
Fire clay	7	0	192	10	
Shale, dark	16	5	209	3	
Shale, sandy	14	0	223	3	
Shale, dark	1	6	224	9	
Slate, black	0	6	225	3	
Shale, dark, sandy	4	0	229	3	
Sandstone, **Quinnimont**	31	0	260	3	
Shale, **Quinnimont**, sandy	30	0	290	3	
Slate, black	7	6	297	9	
Coal, Fire Creek	2	2	299	11	114′ 1″
Fire clay to bottom	2	10	302	9	

In the southwestern portion of Town District, a number of core test holes have been drilled to test the New River Coals as to purity, thickness and commercial value, as follows:

Crab Orchard Coal & Land Co. Core Test No. 5 (62).

Town District, on waters of Laurel Branch of Millers Camp Branch, 2 miles northeast of Glen White; authority, New River Collieries Company; elevation, 2284.0′ L.; published on page 64 of Volume II(A) of the Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	11	2	11	2	
Sandstone, very hard, **Harvey Conglomerate**	25	4	36	6	
Coal, Castle	4	0	40	6	40′ 6″

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandstone partings ...15′ 1″ Shale, sandstone partings ... 7 8 Sandstone, shale partings ... 4 10 Shale, sandstone partings . .33 10 Light shale, sandstone partings....30 3	Guyandot...	91	8	132	2	
Fire clay		1	2	133	4	
Sandstone		13	4	146	8	
Shale, blue		4	0	150	8	
Coal ..... 1′ 0″ Fire clay ..... 3 0 Coal .....2 3 Fire clay ..... 0 1 Coal 0 9	Sewell "B"..	7	1	157	9	117′ 3″
Fire clay		0	8	158	5	
Sandstone, shale partings		32	0	190	5	
Sandstone		12	0	202	5	
Shale, black		0	6	202	11	
Coal, Sewell		0	3	203	2	45′ 5″
Fire clay		4	3	207	5	
Sandstone, shale partings		15	6	222	11	
Shale, blue		5	6	228	5	
Shale, black		3	8	232	1	
Shale, blue		35	0	267	1	
Shale, black, Welch Coal horizon		4	3	271	4	68′ 2″
Sandstone, very hard.....31′ 6″ Shale, sandstone partings ...68 0	Upper Raleigh...	99	6	370	10	
Shale, blue		12	6	383	4	
Shale, black		2	6	385	10	
Sandstone, Lower Raleigh, soft		95	1	480	11	
Coal, Beckley and Fire Creek		9	1	490	0	
Fire clay to bottom		0	8	490	8	219′ 4″

The above boring gives the thickness of the Beckley Coal 9′ 1″, which indicates that possibly the shales between the Beckley and Fire Creek Coal beds have thinned and disappeared at this point, and the two beds united.

Rockhouse Fork Land Co. Core Test No. 3A (63).

Town District, on Shockley Branch, at Glen White; authority, C. C Beury; elevation, 2140′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	28	9	28	9
Sandstone	0	7	29	4

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, shale partings	7	3	36	7	
Shale, blue, sandy	0	3	36	10	
Coal, Sewell	2	8	39	6	39′ 6″
Fire clay	5	0	44	6	
Shale, blue	4	6	49	0	
Sandstone, shale partings 23′ / Shale, blue, sandy. 22½ — **Welch**	45	6	94	6	
Shale, blue	2	0	96	6	
Sandstone, very hard	1	6	98	0	
Slate, black, **Welch Coal horizon**	0	6	98	6	
Sandstone, very hard 34′ / Shale, sandstone partings 30½ — **Upper Raleigh**	64	6	163	0	
Shale, blue	40	6	203	6	
Coal, Little Raleigh "A"	0	4	203	10	164′ 4″
Fire clay	2	6	206	4	
Shale, black, sandy	3	8	210	0	
Shale, blue	5	8	215	8	
Slate, black	0	4	216	0	
Slate, coal partings	0	7	216	7	
Fire clay	2	0	218	7	
Coal 0′ 6″ / Fire clay 6 0 / Slate, black 1 5 / **Coal** 0 8 — **Little Raleigh**	8	7	227	2	23′ 4″
Fire clay	1	10	229	0	
Shale, black	5	9	234	9	
Sandstone, **Lower Raleigh**	39	3	274	0	
Shale, dark	6	1	280	1	
Slate	7	6	287	7	
Coal, Beckley and Fire Creek	9	2	296	9	69′ 7″
Fire clay	2	4	299	1	
Sandstone, very hard	4	10	303	11	
Shale, dark	50	3	354	2	
Sandstone, very hard	8	2	362	4	
Sandstone	10	2	372	6	
Slate, black	1	7	374	1	
Coal, Little Fire Creek	1	9	375	10	79′ 1″
Shale, blue, sandy	20	3	396	1	
Slate	3	10	399	11	
Coal 0′ 11″ / Slate, black 1 8 / **Coal** 1 7 — **No. 9 Pocahontas**	4	2	404	1	28′ 3″
Fire clay	6	8	410	9	
Shale, blue	5	4	416	1	
Sandstone, very hard	7	9	423	10	
Shale, blue, sandy	8	2	432	0	
Shale, light, sandy	1	0	433	0	
Slate, sandstone partings	2	7	435	7	
Shale, blue	2	0	437	7	
Shale, black	0	1	437	8	
Coal, No. 8 Pocahontas	0	4	438	0	33′ 11″
Fire clay	2	10	440	10	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark, slaty	4	3	445	1	
Shale, blue	16	4	461	5	
Shale, sandstone partings	19	4	480	9	
Slate, sandy	3	2	483	11	
Coal, No. 7 Pocahontas	1	2	485	1	47′ 1″
Fire clay	4	6	489	7	
Shale, dark, sandy	3	2	492	9	
Slate, sandstone partings	28	5	521	2	
Shale, dark, sandy	5	4	526	6	
Shale, blue	12	2	538	8	
Coal 1′ 11″ ⎫ No. 6					
Fire clay 0 6 ⎬ Pocahontas	3	7	542	3	57′ 2″
Coal 1 2 ⎭					
Fire clay	0	9	543	0	
Sandstone	1	5	544	5	
Slate, black	7	1	551	6	
Shale, blue	1	8	553	2	
Slate, black	8	4	561	6	
Coal	0	4	561	10	
Fire clay	3	9	565	7	
Shale, light	4	8	570	3	
Sandstone, fine, white	14	5	584	8	
Shale, sandstone partings	13	2	597	10	
Slate, black	4	6	602	4	
Coal 0′ 2″ ⎫ No. 4					
Coal, bony 0 4 ⎭ Pocahontas	0	6	602	10	60′ 7″
Fire clay	4	8	607	6	
Sandstone, dark	3	3	610	9	
Sandstone, **Upper Pocahontas**, very hard	30	0	640	9	
Coal, No. 3 Pocahontas	3	4	644	1	41′ 3″
Fire clay	2	1	646	2	
Shale, blue	12	5	658	7	
Coal	1	8	660	3	
Fire clay	3	2	663	5	
Sandstone	6	8	670	1	
Shale, blue	4	0	674	1	
Coal, No. 2 Pocahontas	2	1	676	2	32′ 1″
Fire clay	4	8	680	10	
Shale, white	8	6	689	4	
Sandstone to bottom	10	8	700	0	

The foregoing interesting boring gives the thickness and intervals of the coals in the New River and Pocahontas Groups from the Sewell Coal to the No. 2 Pocahontas bed, and is located near the Glen White Shaft, the interval from the Sewell Coal to No. 3 Pocahontas being 601′ 3″ instead of 850′-875′ as found at Welch, McDowell County.

Beaver Coal Company Core Test No. 3 (64).

Town District, about ⅛ mile east of Glen White Shaft; authority, E. E. White; completed, April 25, 1908; elevation, 2168.8′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	12	0	12	0	
Sandstone, hard 1′ 6″ Sandstone, shale partings ...14 6	16	0	28	0	
Shale, dark	3	6	31	6	
Coal, Sewell	1	8	33	2	33′ 2″
Fire clay	5	10	39	0	
Shale, dark	10	0	49	0	
Shale, sandy	5	0	54	0	
Shale, dark	1	0	55	0	
Coal, Welch	0	6	55	6	22′ 4″
Sandstone, shale partings ...14′ 6″ Shale, sandy ...18 0 Sandstone ..... 1 6 Shale, dark .... 1 0 Sandstone, hard 32 6 Shale, blue, sandy .....52 8 Sandstone, shale partings ... 8 4 Slate, black .... 0 11 Shale, light, sandy ..... 7 11 Sandstone ..... 4 0 **Upper Raleigh...**	141	4	196	10	
Shale, dark	3	5	200	3	
Coal, bony	0	1	200	4	
Shale, dark	2	8	203	0	
Fire clay	1	0	204	0	
Shale, dark	15	0	219	0	
Coal, Little Raleigh	0	2	219	2	163′ 8″
Shale, dark	4	2	223	4	
Sandstone ..... 3′ 4″ Shale, dark .... 1 4 Sandstone, soft 37 0 **Lower Raleigh...**	41	8	265	0	
Shale, blue	7	1	272	1	
Slate, black	0	4	272	5	
Coal, bony..... 0′ 4″ **Coal** ..... 6 0 **Coal**, bony..... 1 3 **Coal** ..... 3 3 **Beckley and Fire Creek**	10	10	283	3	64′ 1″
Dark shale and fire clay	1	6	284	9	
Sandstone to bottom	0	3	285	0	

Possibly the first diamond core test that was ever made in Raleigh County was drilled at Glen White, under the direction of W. C. Reynolds, an early pioneer in coal prospecting in West Virginia, and its record reads as follows:

Lester Core Test (65).

Town District, at Glen White; authority, W. C. Reynolds; elevation, 2168.2′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	4	0	4	0	
Sandstone, hard, in layers	15	0	19	0	
Shale	5	0	24	0	
Coal 1′ 0″ / Shale 0 2 / Coal 0 3 } Sewell	1	5	25	5	25′ 5″
Fire clay	0	6	25	11	
Slate, dark	16	6	42	5	
Shale	5	8	48	1	
Coal	0	9	48	10	23′ 5″
Fire clay	1	6	50	4	
Shale, sandy	19	3	69	7	
Sandstone	21	0	90	7	
Coal, Welch	1	10	92	5	43′ 7″
Fire clay	2	0	94	5	
Sandstone	25	6	119	11	
Slate, black	52	2	172	1	
Sandstone	6	0	178	1	
Slate, black	10	6	188	7	
Sandstone	7	0	195	7	
Slate, black	3	6	199	1	
Slate, black, gritty	2	2	201	3	
Shale, bituminous	1	6	202	9	
Shale, light	9	0	211	9	
Coal and slate, Little Raleigh "A"	4	6	216	3	123′ 10″
Shale, light	6	6	222	9	
Sandstone	6	0	228	9	
Coal and slate, Little Raleigh	2	0	230	9	14′ 6″
Shale, light	12	0	242	9	
Sandstone, hard, micaceous	22	0	264	9	
Shale, dark, gritty	6	6	271	3	
Coal, with two small partings, Beckley and Fire Creek	9	0	280	3	49′ 6″
Fire clay	1	0	281	3	
Sandstone, very hard, to bottom	4	0	285	3	

In the above section, the Raleigh Sandstones appear to have broken up into thin beds, separated by softer members of either shale or soft sandstones.

Beaver Coal Company Core Test No. 2 (66).

Town District, on Shockley Branch, ½ mile southeast of Glen White; authority, E. E. White; completed, March 1, 1907; elevation, 2174′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	27	0	27	0
Shale with partings	4	0	31	0
Shale, dark	4	0	35	0

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, very hard		10	0	45	0	
Shale, dark, sandy		4	0	49	0	
Coal, Welch		1	6	50	6	50′ 6″
Shale, dark, sandy		1	6	52	0	
Sandstone, very hard ..... 28′						
Shale, with partings 57	Upper					
Sandstone, soft.... 18	Raleigh	132	0	184	0	
Sandstone, with partings 20						
Shale, blue, sandy. 9						
Shale, blue		9	0	193	0	
Shale, black		2	0	195	0	
Sandstone, blue 5′ 0″	Lower					
Sandstone, soft 29 4	Raleigh...	34	4	229	4	
Slate, black		0	3	229	7	
Coal ..... 5′ 5″						
Slate and coal to bottom.. 3 1	Beckley.....	8	6	238	1	187′ 7″

The lower bench of the Beckley appears to be impure and of little commercial value at this point.

Southeastward at the head of Shockley Branch, the Beckley Coal rises faster than the surface of the ground, as is shown in the following core test hole:

Beaver Coal Company No. 1 Core Test (67).

Town District, on Shockley Branch, 1 mile southeast from Glen White; authority, E. E. White; completed, February 13, 1907; elevation, 2199.5′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		6	0	6	0	
Sandstone, very hard, **Upper Raleigh**..		4	0	10	0	
Shale, dark		8	0	18	0	
Slate, black		0	2	18	2	
Coal, Little Raleigh		0	3	18	5	18′ 5″
Fire clay		1	0	19	5	
Sandstone, very hard .....30′ 10″	Lower					
Shale, sandstone partings 57 7	Raleigh...	89	5	108	10	
Sandstone, soft. 1 0						
Shale, dark		3	6	112	4	
Shale, sandstone partings		3	5	115	9	
Shale		15	5	131	2	
Soapstone		1	3	132	5	
Sandstone, very hard		1	3	135	8	
Shale		1	1	134	9	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, very hard	1	6	136	3	
Shale	1	0	137	3	
Sandstone, very hard	0	8	137	11	
Shale	0	9	138	8	
Sandstone, very hard	0	9	139	5	
Shale, sandstone partings	4	4	143	9	
Shale	3	10	147	7	
Coal 0′ 8″ / Slate, black 0 10 / Coal 0 2 / Slate, black 0 3 / Coal, bony 0 4 — Beckley "A"	2	3	149	10	131′ 5″
Fire clay	1	6	151	4	
Shale	7	2	158	6	
Sandstone, very hard	2	8	161	2	
Shale	11	7	172	9	
Slate, black	0	11	173	8	
Coal 3′ 6″ / Coal, bone 1 0 / Coal 0 7 / Coal, bone 0 3 / Coal 0 9 — Beckley	6	1	179	9	30′ 6″
Slate, black 0′ 7″ / Shale, light 13 11 — Quinnimont	14	6	194	3	
Coal, Fire Creek	1	8	195	11	16′ 2″
Shale, light	12	0	207	11	
Sandstone, very hard	33	6	241	5	
Shale, dark, Little Fire Creek Coal horizon	4	0	245	5	
Sandstone, soft, Pineville	38	7	284	0	
Shale, light	55	6	339	6	
Sandstone, soft	4	0	343	6	
Coal 1′ 3″ / Coal, bony 1 8 — No. 9 Pocahontas	2	11	346	5	150′ 6″
Shale, light	11	6	357	11	
Sandstone, soft	7	10	365	9	
Shale, light	5	0	370	9	
Coal, No. 8 Pocahontas	0	5	371	2	24′ 9″
Shale, light	17	1	388	3	
Sandstone, soft, Flattop Mountain	34	7	422	10	
Shale	9	0	431	10	
Coal, No. 7 Pocahontas	0	10	432	8	61′ 6″
Slate, black	0	6	433	2	
Shale, light	10	0	443	2	
Shale, dark	10	6	453	8	
Shale, light	11	6	465	2	
Coal, bony 0′ 5″ / Coal 1 4 / Slate 0 1½ / Coal 1 1 / Coal, bony 0 7 — No. 6 Pocahontas	3	6½	468	8½	36′ 0½″
Fire clay	3	2	471	10½	
Shale, light	3	6½	475	5	
Coal, bony, local	0	4	475	9	7′ 0½″
Shale, light	3	6	479	3	
Sandstone, soft	10	0	489	3	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandstone partings	6	0	495	3	
Sandstone, soft	16	10	512	1	
Shale, sandstone partings	10	0	522	1	
Shale, light	1	4	523	5	
Shale, dark	15	6	538	11	
Sandstone, very hard, **Upper Pocahontas**	25	0	563	11	
Shale, blue, sandy	6	0	569	11	
Sandstone	2	1	572	0	
Shale, blue	3	6	575	6	
Slate, black	0	3	575	9	
Coal, No. 3 Pocahontas	3	4	579	1	103′ 4″
Shale, sandy, to bottom	1	5	580	6	

Beaver Coal Company (Loftus) Core Test (68).

Town District, Soak Creek, ¼ mile northwest of Sophia; authority, Nick Loftus; completed, January 5, 1909; elevation, 2331.3′ L.

	Thickness. Ft.	In.	Total. Ft.	In	
Surface	10	0	10	0	
Shale, blue	23	9	33	9	
Sandstone, **Welch**	45	7	79	4	
Sandstone, shale partings	4	2	83	6	
Coal, Welch	1	3	84	9	84′ 9″
Fire clay	2	0	86	9	
Sandstone, shale partings ... 1′ 7″ Sandstone, very hard .....14 5 Sandstone, very hard, shale partings ... 6 2 Sandstone, very hard ..... 9 7 Shale, sandy....57 6 — **Upper Raleigh**	89	3	176	0	
Slate	2	5	178	5	
Coal, Little Raleigh "A"	0	4	178	9	94′ 0″
Fire clay	3	2	181	11	
Sandstone	11	6	193	5	
Sandstone, shale partings	8	2	201	7	
Shale, blue	7	1	208	8	
Slate, black	1	6	210	2	
Shale, blue	1	0	211	2	
Slate, black	0	3	211	5	
Coal and bone.. 0′ 8″ Shale, blue..... 1 3 **Coal** ..... 0 6 Shale, blue..... 0 7 **Coal** and bone.. 0 9 Slate ..... 0 8 Fire clay..... 2 3 Slate, black..... 0 2 **Coal**, bony..... 0 6 — **Little Raleigh**..	7	4	218	9	40′ 0″

		Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay		0	4	219	1	
Sandstone, shale partings ...11′ 3″						
Sandstone, hard 21 4	Lower					
Shale, blue..... 1 9	Raleigh...	46	6	265	7	
Sandstone, shale partings ...12 2						
Slate		2	0	267	7	
Coal, Beckley		5	9	273	4	54′ 7″
Fire clay to bottom		0	8	274	0	

The above core test hole starts about 20 feet under the Sewell Coal horizon, so that the coal encountered at 273′ 4″ is the Beckley, showing a local increase in the interval between the Sewell and Beckley Coals.

I. C. Prince Core Test No. 1 (69).

Town District, on Soak Creek, 0.6 mile west of Sophia; authority, E. E. White; completed, 1906; elevation, 2344.1′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		5	0	5	0	
Sandstone, **Lower Guyandot**		25	0	30	0	
Shale, blue		2	0	32	0	
Slate, black		1	0	33	0	
Coal, Sewell		1	4	34	4	34′ 4″
Fire clay		0	8	35	0	
Shale, blue		22	0	57	0	
Slate, black		0	8	57	8	
Coal		0	6	58	2	23′ 10″
Fire clay		0	10	59	0	
Shale, blue		3	0	62	0	
Sandstone ..... 10′						
Shale, blue..... 18	Welch.....	43	0	105	0	
Sandstone, very hard ..... 15′						
Shale		0	8	105	8	
Coal, Welch		1	4	107	0	48′ 10″
Shale, blue		2	6	109	6	
Sandstone, very hard .....20′ 6						
Shale, sandy... 9 0	Upper					
Shale, blue, sandy 62 0	Raleigh...	94	2	203	8	
Slate, blue..... 2 8						
Shale, black		0	6	204	2	
Coal, Little Raleigh "A"		0	4	204	6	97′ 6″
Fire clay		1	6	206	0	
Shale, light		8	0	214	0	
Shale, blue		10	0	224	0	
Slate, black		1	6	225	6	

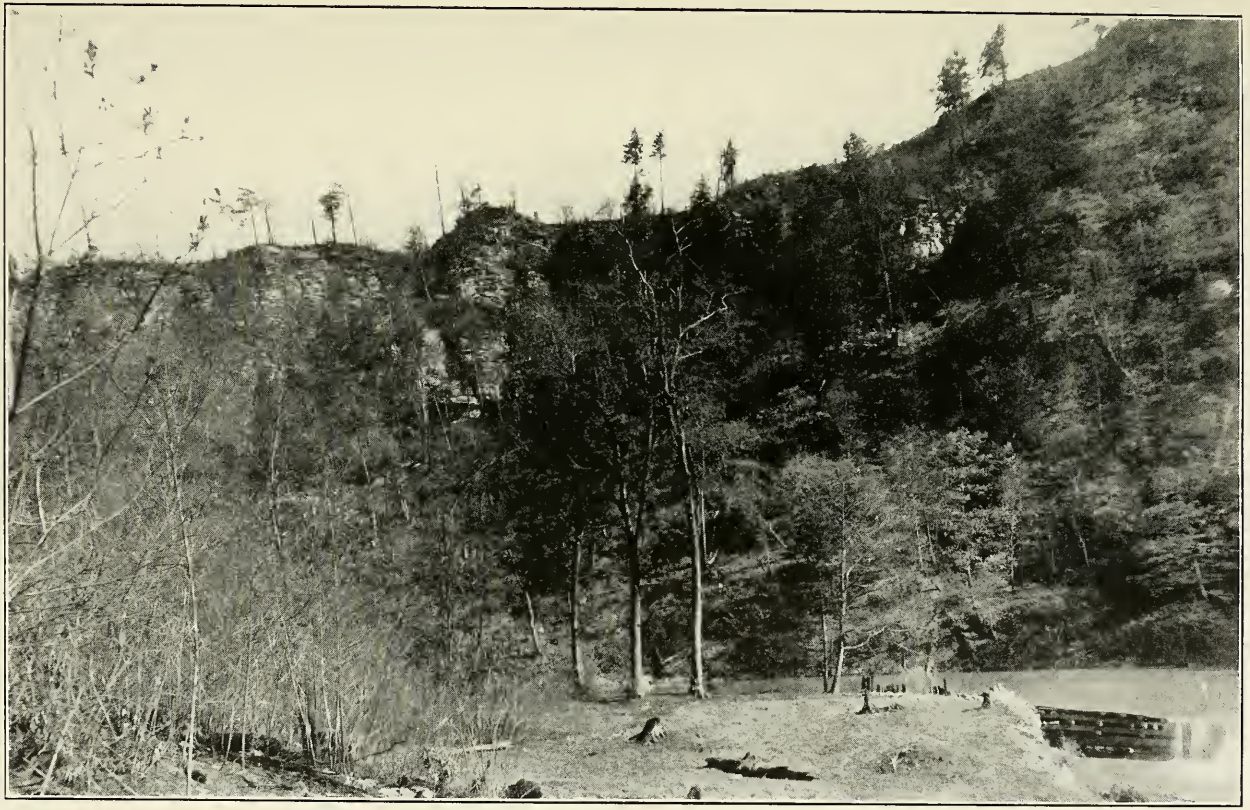

PLATE XI.—View on Piney Creek near Whorley, showing the New River and Pocahontas Groups.

				Thickness. Ft.	In.	Total. Ft.	In.	
Slate, blue				3	0	228	6	
Slate, black				0	2	228	8	
Coal and bone	0′	8″	Little Raleigh					
Shale, blue	1	3						
Coal	0	6						
Shale, blue	0	7						
Coal and bone	0	9		7	4	236	0	31′ 6″
Slate, black	0	8						
Fire clay	2	3						
Slate, black	0	2						
Coal	0	6						
Fire clay				0	4	236	4	
Shale, sandy	6′	0″	Lower Raleigh					
Sandstone	7	8						
Sandstone, hard	3	10						
Shale, blue	2	3		22	6	258	10	
Shale, black	0	9						
Shale, blue, sandy	2	0						
Slate, black				0	3	259	1	
Coal, Beckley				5	4	264	5	28′ 5″
Slate, black, to bottom				6	2	270	7	

Beaver Coal Company Core Test (70).

Town District, at the head of Soak Creek, 1.7 miles west of Sophia; authority, John Laing; completed, October, 1906; elevation, 2388.2′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
White clay	4	0	4	0	
Coal, Sewell	2	0	6	0	6′ 0″
Slate, dark, rotten	13	0	19	0	
Shale, sandy	38	3	57	3	
Sandstone	0	9	58	0	
Shale, sandy	4	0	62	0	
Sandstone, slaty	32	0	94	0	
Shale, sandy	20	0	114	0	
Shale	3	0	117	0	
Sandstone	1	0	118	0	
Slate, dark	17	0	135	0	
Sandstone	7	0	142	0	
Sandstone partings	6	0	148	0	
Sandstone	4	9	152	9	
Coal, Little Raleigh	1	3	154	0	148′ 0″
Slate, sandy	22	6	176	6	
Sandstone	8	2	184	8	
Slate, sandy	28	4	213	0	
Slate, dark	29	0	242	0	
Slate, sandy	5	0	247	0	
Sandstone	24	7	271	7	
Slate, black	3	5	275	0	
Slate, dark	10	0	285	0	
Slate, brown	5	0	290	0	
Sandstone	7	10	297	10	

		Thickness. Ft.	In.	Total. Ft.	In.	
Slate, dark		0	1	297	11	
Coal ..... 3′ 5″	Beckley	4	3	302	2	148′ 2″
Coal, slaty..... 0 10						
Slate, sandy....30′ 10″	Quinnimont	45	2	347	4	
Slate, dark.....14 4						
Coal, Fire Creek		3	5	350	9	48′ 7″
Slate, dark		4	3	355	0	
Sandstone		4	0	359	0	
Slate, sandy		98	0	457	9	
Sandstone ..... 5′						
Sandstone, with partings 24						
Sandstone 7	Flattop Mountain, Pierpont and Eckman	114	0	571	0	
Sandstone, shale partings 18						
Sandstone 28						
Slate, sandy..... 28						
Sandstone 4						
Slate		2	0	573	0	
Sandstone		11	7	584	7	
Coal, No. 6 Pocahontas		3	10	588	5	237′ 8″
Slate, dark, to bottom		1	7	590	0	

The above core test hole begins about 4 feet above the Sewell Coal horizon.

Beaver Coal Company Core Test No. 2 (71).

Town District, on Soak Creek, ½ mile east of Sophia; authority, H. W. Althouse; completed, 1906; elevation, 2314.8′ L.; published in Volume II(A) page 53, of Survey Reports.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		6	0	6	0	
Sandstone, fine grained, hard, white, Welch		16	0	22	0	
Coal, Little Raleigh "A"		0	6	22	6	22′ 6″
Shale, gray		1	0	23	6	
Sandstone, fine grained, hard, white		35	6	59	0	
Shale, dark, sandy		25	0	84	0	
Shale, black		24	0	108	0	
Sandstone		3	6	111	6	
Shale, black		2	0	113	6	
Shale, sandy		49	6	163	0	
Shale, black		2	0	165	0	
Coal .....0′ 7″						
Shale, black.....0 7						
Coal 0 6	Beckley					
Shale, gray.....1 6	"Rider"	4	8	169	8	147′ 2″
Coal, bony.....0 10						
Shale, black.....0 6						
Coal, bony.....0 2						
Shale, black		1	0	170	8	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, gray	17	0	187	8	
Shale, black	4	1	191	9	
Coal, Beckley	4	0	195	9	26′ 1″
Shale, sandy, **Quinnimont**	58	3	254	0	
Coal, Fire Creek	1	3	255	3	59′ 6″
Shale, black	0	6	255	9	
Shale, sandy	1	0	256	9	
Sandstone to bottom	14	3	271	0	

Beaver Coal Company Core Test No. 1 (72).

Town District, one mile east of Sophia; authority, H. W. Althouse; completed, Oct. 3, 1906; elevation, 2297.5′ L.; published on pages 51-2 of Volume II(A) of the Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	17	0	17	0	
Slate, dark	5	0	22	0	
Shale, gray	3	1	25	1	
Coal	0	3	25	4	
Slate, shaly	8	0	33	4	
Slate, gray	28	2	61	6	
Coal, Beckley "Rider"	0	10	62	4	62′ 4″
Fire clay	3	8	66	0	
Slate, gray	12	4	78	4	
Slate, dark	5	1	83	5	
Coal 0′ 2″ / Slate, dark 1 0 / **Coal** 0 1 — **Beckley**	1	3	84	8	22′ 4″
Slate, dark	8	7½	93	3½	
Coal 2′ 0″ / Slate 0 1 / **Coal** 1 7 — **Fire Creek**	3	8	96	11½	12′ 3½″
Slate, dark	5	3½	102	3	
Shale, gray	8	0	110	3	
Slate, dark	6	0	116	3	
Shale, sandy 2′ 9″ / Sandstone 10 0 / Shale, sandy, gray 23 0	35	9	152	0	
Shale, dark	0	3	152	3	
Coal, Little Fire Creek	0	3	152	6	55′ 6½″
Sandstone	4	0	156	6	
Shale, sandy, dark	11	6	168	0	
Shale, dark	18	0	186	0	
Fire clay	1	0	187	0	
Shale, dark	1	0	188	0	
Shale, mixed with fire clay	1	0	189	0	
Sandstone	44	0	233	0	
Shale, sandy	4	0	237	0	
Shale, black	3	11	240	11	
Coal, No. 9 Pocahontas	0	8	241	7	89′ 1″
Fire clay, sandy	4	0	245	7	
Sandstone 10′ 5″ / Shale, sandy 8 0 / Sandstone 17 2 — **Flattop Mountain**	35	7	281	2	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, bony.....0′ 2″ ⎫ No. 7					
Coal .....0 5 ⎭ Pocahontas	0	7	281	9	40′ 2″
Shale, black.....	0	4	282	1	
Fire clay.....	4	4	286	5	
Sandstone	7	0	293	5	
Shale, sandy.....	3	0	296	5	
Shale, black.....	0	3	296	8	
Coal, slaty.....0′ 4″ ⎫ No. 6					
Coal, bony.....0 3 ⎭ Pocahontas	0	7	297	3	15′ 6″
Shale, black.....	3	4	300	7	
Sandstone with shale partings.....	7	5	308	0	
Shale, sandy.....	2	0	310	0	
Shale, black.....	0	4	310	4	
Shale, sandy.....	5	1	315	5	
Shale, black.....	1	1	316	6	
Shale, sandy.....	18	1	334	7	
Sandstone	0	10	335	5	
Shale, sandy.....	3	0	338	5	
Sandstone	1	5	339	10	
Shale, sandy.....	7	2	347	0	
Sandstone	24	0	371	0	
Shale, sandy.....	1	2	372	2	
Sandstone	20	0	392	2	
Sandstone mixed with coal.....	1	0	393	2	
Sandstone	1	4	394	6	
Shale, sandy.....	7	10	402	4	
Coal, No. 4 Pocahontas, slaty.....	0	4	402	8	105′ 5″
Shale, dark.....	0	4	403	0	
Shale, sandy.....	1	0	404	0	
Sandstone, hard.....	4	0	408	0	
Shale, sandy.....	6	0	414	0	
Shale, blue.....	2	0	416	0	
Shale, dark.....	7	7	423	7	
Coal .....2′ 0″ ⎫ No. 3					
Slate binder.....0 3 ⎬ Pocahontas	3	8	427	3	24′ 7″
Coal .....1 5 ⎭					
Fire clay.....	1	6	428	9	
Sandstone to bottom.....	4	3	433	0	

The writer has made some changes in the correlation of the coals from that in Volume II(A).

Beaver Coal Company Core Test No. 3 (73).

Town District, on Soak Creek, 1.5 miles east of Sophia, opposite mouth of Laurel Branch at Affinity; authority, H. W. Althouse; completed, 1906; elevation, 2287.2′ L.; published on page 54 of Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	11	0	11	0
Shale, black.....	1	6	12	6
Shale, blue.....	1	10	14	4
Slate, black.....	0	2	14	6

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal .....0′ 8″ ⎫ Beckley					
Bone .....0 5 ⎬ "Rider"...	1	4	15	10	15′ 10″
Coal .....0 3 ⎭					
Fire clay.....	2	0	17	10	
Shale, sandy.....	1	0	18	10	
Sandstone	28	2	47	0	
Shale, dark.....	9	4	56	4	
Slate, black.....	0	2	56	6	
Coal .....0′ 11″ ⎫					
Shale, dark.....2 0 ⎪ Beckley and					
Bone .....0 2 ⎬ Fire Creek.	8	6	65	0	49′ 2″
Coal .....5 1 ⎪					
Bone .....0 4 ⎭					
Shale, light.....	3	0	68	0	
Shale, sandy.....	7	6	75	6	
Sandstone	1	0	76	6	
Shale, sandy, dark.....	5	6	82	0	
Slate, dark.....	4	10	86	10	
Shale, sandy.....	11	0	97	10	
Shale, blue.....	21	5	119	3	
Slate, black.....	0	2	119	5	
Coal, Little Fire Creek.....	1	0	120	5	55′ 5″
Slate, black.....	0	4	120	9	
Shale, blue, to bottom.....	1	8	122	5	

The coal encountered at 120′ 5″ is possibly the Little Fire Creek seam.

Beaver Coal Company Core Test No. 4 (74).

Town District, on Laurel Branch of Soak Creek, one mile from mouth, 1.5 miles east of Hotcoal; authority, H. W. Althouse; completed, 1906; elevation, 2478.3′ L.; published on page 55, Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sand and boulders.....	27	0	27	0	
Shale, blue.....	3	0	30	0	
Shale, sandy, dark.....	50	0	80	0	
Slate, black.....	0	2	80	2	
Coal, Little Raleigh.....	0	2	80	4	80′ 4″
Shale, light.....	3	6	83	10	
Sandstone, Lower Raleigh.....	71	3	155	1	
Coal .....2′ 4″ ⎫					
Slate and bone...0 4 ⎪					
Coal .....1 4 ⎪					
Slate .....0 1 ⎪ Beckley.....	5	10	160	11	80′ 7″
Coal .....0 10 ⎪					
Slate .....0 3 ⎪					
Bone .....0 1 ⎪					
Coal .....0 7 ⎭					
Slate, black.....	0	5	161	4	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy, dark	35	0	196	4	
Slate, black	1	4	197	8	
Shale, blue	5	4	203	0	
Shale, sandy, blue	25	0	228	0	
Shale, blue	3	0	231	0	
Slate, black	6	6	237	6	
Coal, Fire Creek	0	6	238	0	77′ 1″
Fire clay	1	0	239	0	
Shale, sandy, light	7	0	246	0	
Sandstone to bottom	5	0	251	0	

The coal at 238 feet is the Fire Creek bed, and it will be noted that the interval between this coal and the Beckley bed has increased to 77′ 1″.

In the northern part of Town District, the following core tests were drilled:

E. J. Berwind Core Test B-7 (75).

Town District, on Sand Fork of Paint Creek, on A. Bailey farm, 1.5 miles southeast of Maynor; authority, J. S. Cunningham; completed, Sept. 21, 1909; elevation, 1858.67′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	34	0	34	0
Shale, dark	28	0	62	0
Sandstone, very hard	31	0	93	0
Shale, dark	8	0	101	0
Sandstone and shale mixed	8	0	109	0
Sandstone	9	0	118	0
Fire clay	5	0	123	0
Shale, dark	45	0	168	0
Fire clay	6	0	174	0
Shale, dark, sandy	20	0	194	0
Slate, black	4	0	198	0
Shale, dark	6	0	204	0
Slate, black	10	0	214	0
Sandstone, **Lower Guyandot**	25	0	239	0
Slate, black	6	0	245	0
Shale, light, sandy	4	0	249	0
Coal, Sewell "A"	0	4	249	4
Shale, black	6	8	256	0
Coal 2′ 6″ **Coal and bony coal** 0 3 } Sewell. **Coal** 1 9	4	6	260	6
Fire clay, black, to bottom	12	6	273	0

E. J. Berwind Core Test No. B-11 (76).

Town District, on Sand Fork of Paint Creek, 1.5 miles southeast of Maynor; and 150 feet southeast of No. B-7 (75); authority, J. S. Cunningham; completed, Dec. 3, 1909; elevation, 1879.13′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	35	0	35	0	
Shale, dark	43	0	78	0	
Sandstone, very hard, **Harvey Conglomerate**	43	0	121	0	
Sandstone and shale mixed	15	0	136	0	
Shale, dark	60	0	196	0	
Fire clay, **Sewell "B" Coal horizon**	4	0	200	0	200′ 0″
Shale, dark	14	0	214	0	
Slate, black	2	4	216	4	
Coal, Sewell "A"	0	8	217	0	17′ 0″
Sandstone .....34′ } **Lower**					
Shale, light, sandy.. 7 } **Guyandot**	41	0	258	0	
Slate, black	11	0	269	0	
Coal .....0′ 8″ }					
Slate, black.....1 4 } **Sewell**	6	4	275	4	58′ 4″
Coal .....4 4 }					
Fire clay, black, to bottom	1	8	277	0	

The foregoing hole was drilled to get a complete core of this coal in the Sewell bed. It will be noted that the black slate has decreased from 6′ 8″ in (75) to 1′ 4″ in the above core test.

Enoch Smith Core Test B-23 (77).

Town District, on Maple Fork of Sand Fork, 2.1 miles east of Cirtsville P. O.; authority, J. S. Cunningham; completed, August 5, 1912; elevation, 2112.64′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	23	0	23	0
Shale, light, sandy	8	9	31	9
Shale, dark	4	3	36	0
Shale, light	12	10	48	10
Shale, sandy	11	10	60	8
Sandstone, hard	48	6	109	2
Sandstone	73	7	182	9
Slate, black	36	11	219	8
Sandstone .....46′ 6″ } **Harvey Conglomerate**				
Sandstone **and** shale ..... 4 6 }	51	0	270	8
Shale, dark	15	2	285	10
Slate, black	3	6	289	4

		Thickness. Ft.	In.	Total. Ft.	In.
Sandstone and shale .....15′ 0″ Sandstone, hard 61 10 Sandstone and shale 7 0	Guyandot ..	83	10	373	2
Shale, sandy, dark		3	0	376	2
Sandstone and shale.....		8	2	384	4
Slate, black		74	10	459	2
Sandstone, Lower Guyandot.....		52	5	511	7
Slate, black		15	5	527	0
Coal ..... 0′ 11½″ Slate, black... 2 3½ Coal 3 9½	Sewell	7	0½	534	0½
Fire clay, hard, to bottom.....		2	11½	537	0

E. J. Berwind Core Test No. B-12 (78).

Town District, on Middle Fork of Sand Fork, one mile southeast of Maynor; authority, J. S. Cunningham; completed, 1909; elevation, 1822.82′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	10	0	10	0
Sandstone, very hard, Harvey Conglomerate.....	84	0	94	0
Shale, with sandstone partings.....	15	0	109	0
Shale, dark, sandy	87	0	196	0
Sandstone, Lower Guyandot.....	26	0	222	0
Shale	5	0	227	0
Slate, black.....	0	6	227	6
Coal, Sewell "Rider".....	1	6	229	0
Slate, blue	5	4	234	4
Slate, black	1	0	235	4
Coal ..... 0′ 2″ Coal, bony..... 0 6 Coal, lost 2″.... 3 8 — Sewell.....	4	4	239	8
Fire clay to bottom.....	1	9	241	5

E. J. Berwind Core Test B-9 (79).

Town District, on Middle Fork of Sand Fork, 1.1 miles southeast of Maynor, and 150 feet southeast of (78); authority, J. S. Cunningham; completed, October 22, 1909; elevation, 1822′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	5	0	5	0
Sandstone, very hard ..... 80′ Shale, and sandstone partings 25 — Harvey Conglomerate	105	0	110	0
Shale, dark, sandy.....	37	0	147	0

	Thickness. Ft.	In.	Total. Ft.	In.
Slate, black	38	0	185	0
Sandstone, Lower Guyandot	33	0	218	0
Slate, black	5	0	223	0
Slate	5	4	228	4
Coal, lost 1′ 10″, Sewell	4	2	232	6
Fire clay, black, to bottom	2	6	235	0

A portion of the core of the coal bed was lost in this boring so that core test No. B-12 (78) was later drilled to test the purity of the coal.

E. J. Berwind Core Test No. B-6 (80).

Town District, on Middle Fork of Sand Fork, below the junction of Maple Fork, 1.25 miles southeast of Maynor; completed, August 23, 1909; elevation, 1865.41′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	25	0	25	0
Sandstone, very hard, Harvey Conglomerate	75	0	100	0
Shale, dark, sandy	6	0	106	0
Sandstone	5	0	111	0
Shale, dark	15	0	126	0
Fire clay, Castle Coal horizon	1	0	127	0
Sandstone	8	0	135	0
Shale, dark	76	0	211	0
Slate, black	21	0	232	0
Sandstone	16	0	248	0
Slate, black	14	0	262	0
Sandstone	5	4	267	4
Slate	3	4	270	8
Slate, black	1	9	272	5
Bone and coal mixed ..... 0′ 1″ Coal (core lost 3′ 2″) ..... 3 9 — Sewell	3	10	276	3
Fire clay, black, to bottom	2	3	278	6

E. J. Berwind Core Test No. B-80 (81).

Town District, on Sand Fork, 1.3 miles southeast of Maynor, on the E. Bailey farm; authority, J. S. Cunningham; completed, 1913; elevation 1833.52′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	25	0	25	0
Sandstone, very hard ..... 38′ Shale, sandy ..... 30 — Harvey Conglomerate	68	0	93	0
Shale, dark, Sandy Huff	97	0	190	0

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone ..... 32′ 0″ Shale, light, sandy 18 4	Guyandot ..	50	0	240	4	
Slate and coal mixed ..... 3′ 0″ Slate ..... 1 2 Coal, (lost 9″).. 1 0	Sewell.....	5	2	245	6	245′ 6″
Shale, fire clay		2	6	248	0	
Shale, light, sandy.....		6	0	254	0	
Sandstone ..... 11′ Slate, black ..... 5 Slate, sandy..... 1 Sandstone ..... 28 Shale, dark..... 5 Sandstone 4	Welch	54	0	311	0	
Shale, light, sandy		3	0	311	0	
Sandstone		5	0	316	0	
Shale and fire clay, Welch Coal horizon		4	0	320	0	74′ 6″
Sandstone, very hard ..... 7 Shale, dark..... 1 Sandstone, very hard ..... 81 Sandstone 61	Upper and Lower Raleigh ...	150	0	470	0	
Coal ..... 0 3″ Fire clay and shale ..... 1 2 Coal 3 10	Beckley	5	3	475	3	155′ 3″
Slate to bottom		2	3	477	6	

The foregoing core test shows the Beckley bed to be of commercial thickness and purity at this point.

Russell Land Company Core Test No. 10 (82).

Town District, Middle Fork of Sand Fork of Paint Creek, on the G. & R. Williams farm, near the old George place; 2.1 miles southwest of Price Hill; authority, New River Company; completed, May 18, 1914; elevation, 2126.22′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Clay and boulders	9	0	9	0
Quicksand and boulders	5	0	14	0
Sandstone, Panther and Upper Iaeger.	101	0	115	0
Shale	21	0	136	0
Sandstone, Harvey Conglomerate....	50	0	186	0
Shale	20	0	206	0
Sandstone and sandy shale	34	0	240	0
Sandstone, conglomerate, Guyandot..	60	0	300	0
Shale	86	0	386	0
Sandstone	10	0	396	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone with small seams of coal 1-16" thick	38	2	434	2	
Coal, Sewell	0	7	434	9	
Shale	7	3	442	0	
Sandstone	2	0	444	0	
Shale, hard, to bottom	18	0	462	0	

The above boring shows the **Sewell Coal** very thin at this point. It is quite probable that a roll was encountered here.

In the southern part of Town District, the following core test holes were drilled:

Beaver Coal Company Core Test No. 14 (83).

Town District, on west bank of Soak Creek, on Tract No. 8, ½ mile west of mouth of creek; authority, Bailey Wood Coal Company; completed, Jan. 2, 1908.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	4	6	4	6	
Sandstone, soft	51	2	55	8	
Coal, Beckley	3	11	59	7	59' 7"
Fire clay	1	5	61	0	
Shale, sandstone partings, **Quinnimont**	45	2	106	2	
Shale, blue	4	8	110	10	
Coal, Fire Creek	0	9	111	7	52' 0"
Slate	0	1	111	8	
Shale, dark	6	0	117	8	
Shale, sandy	18	10	136	6	
Shale, blue	1	6	138	0	
Shale, sandy	6	5	144	5	
Shale, blue	7	8	152	1	
Coal 1' 7" / Slate 0 7 / **Coal** 0 3 — **Little Fire Creek**	2	5	154	6	42' 11"
Fire clay to bottom	0	10	155	4	

Beaver Coal Company Core Test No. 15 (181).

Town District, on the head of a branch of Soak Creek flowing from the north, 0.8 mile west of Pemberton; authority, Bailey Wood Coal Co.; completed, April, 1910; elevation, 2478.3' L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	2	0	2	0	
Shale, blue	1	2	3	2	
Coal, Sewell	1	8	4	10	4' 10"
Shale, blue	1	2	6	0	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy ....35′ 0″ Sandstone ..... 5 0 Sandstone, shaly 17 7	Welch	57	7	63	7	
Shale, blue.....		3	10	67	5	
Slate		0	2	67	7	
Coal, Welch		1	10	69	5	64′ 7″
Fire clay		7	8	77	1	
Shale, blue.....		11	5	88	6	
Coal, bony		0	2	88	8	
Shale, sandy .... 1′ 6″ Sandstone ..... 6 3 Shale, sandy..... 5 1 Shale, blue..... 1 4 Sandstone, very hard 29 9	Upper Raleigh..	43	11	132	7	
Coal, Little Raleigh		1	5	134	0	64′ 7″
Shale, blue.....		0	5	134	5	
Sandstone, very hard, with shale partings .....27′ 7″ Shale, sandy....65 0 Sandstone ..... 6 4 Shale, sandy 10 2	Middle Raleigh..	109	1	243	6	
Slate		3	6	247	0	
Sandstone .....4′ 2″ Shale, sandy.... 5 7 Sandstone .....18 3 Shale, blue 11 9	Lower Raleigh...	39	9	286	9	
Coal, Beckley "Rider"		0	10	287	7	
Shale, blue		1	8	289	3	
Coal ..... 4′ 2″ **Coal,** bony..... 0 3	Beckley.....	4	5	293	8	159′ 8″
Shale, blue, to bottom		1	4	295	0	

The foregoing boring begins above the Sewell Coal and extends through the Beckley.

Trap Hill District.

A large number of borings have been sunk in Trap Hill District to test the New River and Pocahontas Coals, and some of these records will now be given.

W. P. Shumate Core Test No. 1 (86).

Trap Hill District, on Right Fork of Sandlick Creek; authority W. P. Shumate; drilled by Enoch Smith, et al.; elevation, 1740′ B.; boring stopped at 167 feet, not reaching the Sewell seam nor passing through any coals; no detailed record could be obtained.

The **Crock Mankin Core Test No. 1 (87)**, on Dingess Branch, 1.5 miles northeast of Trap Hill P. O., is published on page 135 in the section 2 miles northeast of Trap Hill P. O.

John Poteet Core Test No. 1 (88).

Trap Hill District, on Marsh Fork, 1 mile southwest of Trap Hill P. O.; authority, E. M. Merrill; elevation, 1890′ B.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		28	6	28	6	
Sandstone, **Harvey Conglomerate**		56	2	84	8	
Shale, sandy		18	3	102	11	
White sandstone and shale...16′ 0″						
Sandstone 87 10	**Guyandot**..	110	5	213	4	
White sandstone. 6 7						
Sandstone and shale		8	4	221	8	
Coal, Sewell "B"		0	11	222	7	222′ 7″
Sandstone		13	2	235	9	
Shale		16	3	252	0	
Sandstone, black 47′ 0″						
Sandstone, conglomerate...12 6	**Lower Guyandot**..	77	6	329	6	
Sandstone 18 0						
Coal, Sewell		1	2	330	8	108′ 1″
Slate and fire clay		3	8	334	4	
Sandstone, **Welch**		41	10	376	2	
Shale slate		26	8	402	10	
Sandstone, **Raleigh**		135	0	537	10	
Shale, **Beckley Coal horizon**		4	2	542	0	211′ 4″
Sandstone and slate .....31′ 4″	**Quinnimont**..	78	6	620	6	
Sandstone 47 2						
Coal, Fire Creek		4	11	625	5	83′ 5″
Slate, white		11	3	636	8	
Sandstone		26	8	663	4	
Shale		14	7	677	11	
Sandstone		33	2	711	1	
Slate and shale		22	5	733	6	
Sandstone, **Flattop Mountain**		68	3	801	9	
Shale		6	9	808	6	
Slate		13	0	821	6	
Slate, black		6	8	828	2	
Coal, No. 6 Pocahontas		0	2	828	4	202′ 11″
Slate		3	6	831	10	
Sandstone, **Eckman**		38	1	869	11	
Sandstone and shale		18	10	888	9	
Sandstone, **Upper Pocahontas**		45	0	933	9	
Slate, black		7	3	941	0	
Coal ..... 5′ 2″						
Slate 0 1						
Coal 1 7	**No. 3**					
Slate 0 0½	**Pocahontas**	7	9½	948	9½	120′ 5½″
Coal to bottom.. 0 11						

The foregoing interesting section gives the interval between the Sewell and No. 3 Pocahontas Coals 618′ 1½″ at this point, and according to the boring the **No. 3 Pocahontas Coal** is of commercial thickness and purity (which is rather surprising for this locality, and should not be considered seriously until confirmed by other borings made in the vicinity, since the deposit reported may be only of very limited extent with the thickness indicated.—I. C. W.)

One and a half miles southeast at Rockhouse Fork, the following boring was drilled:

Rockhouse Fork Land Company Core Test No. 7 (89).

Trap Hill District, on Rockhouse Fork of Maple Meadow Creek, 2.1 miles southwest of Surveyor; authority, C. C. Beury; elevation, 1950′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	15	5	15	5	
Shale, dark	13	7	29	0	
Bone	2	7	31	7	
Fire clay	2	8	34	3	
Shale, blue	28	6	62	9	
Slate, black	7	4	70	1	
Coal	1	3	71	4	71′ 4″
Fire clay	1	9	73	1	
Sandstone, very hard, **Harvey Conglomerate**	39	2	112	3	
Shale, sandstone partings	56	4	168	7	
Sandstone, very hard, **Guyandot**	98	3	266	10	
Shale, dark	6	2	273	0	
Sandstone, very hard ..... 9′ 1″ Shale, dark, sandy .....31 11 Sandstone, shale partings ....14 3 Sandstone .....32 7 — **Lower Guyandot** ...	87	10	360	10	
Shale, blue	2	6	363	4	
Coal, Sewell	1	8	365	0	293′ 8″
Fire clay	1	3	366	3	
Shale, sandstone partings, **Welch**	23	8	389	11	
Slate, black	2	4	392	3	
Coal, Welch	1	9	394	0	29′ 0″
Fire clay	3	1	397	1	
Sandstone .....64′ 6″ Sandstone, shale partings 39 5	103	11	501	0	
Shale, dark, **Little Raleigh Coal horizon**	4	3	505	3	
Sandstone, **Lower Raleigh**, very hard..	76	6	581	9	
Sandstone, shale partings	8	3	590	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark	8	9	598	9	
Sandstone, **Quinnimont**	49	6	648	3	
Sandstone, shale partings	2	0	650	3	
Slate, black	0	2	650	5	
Coal, Fire Creek	5	2	655	7	261′ 7″
Slate to bottom	2	0	657	7	

Rockhouse Fork Land Company Core Test No. 5A (90).

Trap Hill District, on Rockhouse Fork of Maple Meadow Creek, at Bryson; completed, 1905; authority, C. C. Beury; elevation, 1950′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	20	6	20	6	
Shale, blue	2	0	22	6	
Sandstone	6	0	28	6	
Sandstone, shale partings	11	5	39	11	
Sandstone, brown	2	4	42	3	
Sandstone, very hard	38	5	80	8	
Shale, blue	1	3	81	11	
Sandstone, very hard	27	4	109	3	
Shale, blue	9	4	118	7	
Sandstone	0	4	118	11	
Shale, blue	7	9	126	8	
Sandstone	11	10	138	6	
Coal, Sewell "A"	0	11	139	5	139′ 5″
Fire clay	1	0	140	5	
Shale, blue, sandy	3	9	144	2	
Sandstone, shale partings	5	7	149	9	
Shale, blue, sandy	15	8	165	5	
Slate	1	9	167	2	
Coal, Sewell	1	5	168	7	29′ 2″
Slate	0	11	169	6	
Shale, blue	5	7	175	1	
Shale, sandy, sandstone partings	28	8	203	9	
Coal, Welch	0	11	204	8	36′ 1″
Fire clay	2	10	207	6	
Sandstone	6	3	213	9	
Sandstone, shale partings	9	1	222	10	
Sandstone	11	3	234	1	
Coal, Little Raleigh	0	11	235	0	30′ 4″
Fire clay	4	3	239	3	
Shale, sandy, sandstone partings .... 2′ 6″ Sandstone, very hard .....24 4 } **Upper Raleigh** ..	26	10	266	1	
Coal, Little Raleigh	2	8	268	9	33′ 9″
Shale, blue, sandy	2	6	271	3	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandstone partings ... 5′ 5″ Sandstone, shale partings .... 0 10 Shale, sandstone partings ....18 9 Shale, blue, sandy .....53 7 Shale, sandstone partings 9 2	Lower Raleigh ..	77	9	359	0	
Sandstone, shale partings, **Beckley Coal horizon**		7	3	366	3	97′ 6″
Shale, sandstone partings		43	6	409	9	
Sandstone .....11′ 3″ Sandstone, very hard, to bottom 16 0	Quinnimont	27	3	437	0	

The **Beckley Coal** appears to be absent at this point, since its horizon belongs at 359 feet.

Rockhouse Fork Land Company Core Test No. 5 (91).

Trap Hill District, on head of Rockhouse Fork of Maple Meadow Creek, 0.8 mile southeast of Bryson; authority, C. C. Beury; elevation, 1980′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	5	0	5	0	
Shale, dark ..... 15′ Sandstone, shale partings ..... 23 — **Guyandot** ...	38	0	43	0	
Shale, blue	1	0	44	0	
Coal, Sewell "B"	1	0	45	0	45′ 0″
Fire clay	1	0	46	0	
Shale, light	4	0	50	0	
Sandstone, shale partings, **Lower Guyandot**	20	0	70	0	
Shale, blue	1	6	71	6	
Slate, black	2	6	74	0	
Coal, Sewell	1	6	75	6	30′ 6″
Fire clay	0	6	76	0	
Sandstone, shale partings	19	0	95	0	
Sandstone	12	0	107	0	
Shale, blue, sandy	6	0	113	0	
Slate, black	4	0	117	0	
Shale, light	3	0	120	0	
Sandstone, **Upper Raleigh**	42	0	162	0	
Sandstone, blue	2	6	164	6	
Shale, blue	1	3	165	9	
Coal, Little Raleigh	0	4	166	1	90′ 7″
Fire clay	1	0	167	1	
Shale, dark	0	6	167	7	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, very hard, **Lower Raleigh**	125	5	293	0	
Shale, blue, sandy, **Beckley Coal horizon**	10	0	303	0	
Sandstone	7	0	310	0	
Sandstone, shale partings	3	6	313	6	
Shale, blue	6	6	320	0	
Shale, light, sandy	11	6	331	6	
Sandstone, **Quinnimont**	44	0	375	6	
Coal 3′ 6″ Bone and slate.. 1 6 } **Fire Creek** **Coal** 2 0	7	0	382	6	216′ 5″
Slate, black	2	6	385	0	
Shale, blue, sandy	21	4	406	4	
Shale, blue	3	6	409	10	
Slate, black	1	6	411	4	
Coal, slaty, **Little Fire Creek**	2	6	412	10	30′ 4″
Fire clay	2	2	415	0	
Shale, blue, sandy, to bottom	10	0	425	0	

The **Crab Orchard Coal & Land Co. Core Test No. 3 (92)**, on head of Stevens Branch of Marsh Fork, N. 11° W. 1.8 miles from Eccles, published in Volume II(A), page 61, of the Survey Reports, is republished on page 126 in the Section 1.7 Miles Northwest of Eccles.

The **Crab Orchard Coal & Land Co. Core Test No. 20 (93)**, on east side of Stevens Branch, N. 84° W. 1.9 miles from Eccles, published in Volume II(A), page 81, W. Va. Geological Survey Reports, is republished on page 129 in the Section 2 miles northwest of Eccles.

The foregoing sections indicate the absence of the New River Coals at this point. The **Sewell Coal** has entirely disappeared, while in Core Test No. 3 (92), the Sewell was present and in (88), 1.4 miles northwest, this coal bed was encountered at a depth of 330′ 8″ and only 1′ 2″ thick, and in both borings, the **Beckley Coal** is absent.

The **Crab Orchard Coal & Land Co. Core Test No. 12 (94)**, on Millers Camp Branch, ½ mile southeast of Harper, published in Volume II(A), pages 73-4, of Survey Reports, is republished on page 124 in the Harper Section. This boring indicates that both the Sewell and Beckley beds are valuable at this point.

Crab Orchard Coal & Land Co. Core Test No. 11 (95).

Trap Hill District, on head of Ugly Branch of Marsh Fork, N. 70° W. one mile from Eccles; authority, New River Collieries Co.; elevation, 2050′ B.; published in Volume II(A), pages 71-2, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	8	0	8	0	
Sandstone, hard	91	0	99	0	
Shale, dark	11	3	110	3	
Sandstone	3	1	113	4	
Shale, sandy, dark	26	3	139	7	
Slate, black	4	7	144	2	
Coal, dirty, Sewell "A"	0	10	145	0	145′ 0″
Fire clay	1	6	146	6	
Shale, sandy, dark	6	4	152	10	
Sandstone and shale	10	6	163	4	
Slate	3	6	166	10	
Sandstone	9	5	176	3	
Slate, gray	3	6	179	9	
Coal and bone...0′ 8″ Coal .....1 4 Bone .....0 1 } Sewell..... Coal and bone....1 3 Coal 2 1	5	5	185	2	40′ 2″
Slate, black	5	4	190	6	
Shale, sandy, dark	7	6	198	0	
Coal, Sewell "Split"	1	2	199	2	14′ 0″
Fire clay	0	10	200	0	
Sandstone, Welch	19	0	219	0	
Slate, gray	12	0	231	0	
Bone .....0′ 2″ Coal .....0 3 } Welch..... Bone .....0 3 Coal 0 4	1	0	232	0	32′ 10″
Shale, sandy, dark	7	2	239	2	
Sandstone and shale .....34′ 8″ Sandstone, soft..33 1 } Upper Raleigh... Sandstone, hard.48 10	116	7	355	9	
Shale, sandy, dark	0	4	356	1	
Sandstone	11	3	367	4	
Shale, sandy, dark	12	4	379	8	
Slate, black	2	11	382	7	
Coal, Little Raleigh	0	3	382	10	150′ 10″
Slate, black	0	8	383	6	
Sandstone and shale .....10′ 8″ Shale, sandy, soft .....47 3 } Lower Raleigh...	57	11	441	5	
Coal and bone, Beckley "Rider"	0	4	441	9	
Slate, black	0	10	442	7	
Sandstone	0	10	443	5	
Shale, dark	0	8	444	1	
Bone	0	4	444	5	

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone		5	1	449	6	
Coal 3′ 7½″						
Bone 0 9	Beckley	7	4½	456	10½	74′ 0½″
Coal 3 0						
Sandstone		1	1½	458	0	

The foregoing section reveals a great variation in the coals and sandstones from Core Test No. 12 (94), published on page 124 in the section for Harper.

Crab Orchard Coal & Land Co. Core Test No. 30 (96).

Trap Hill District, on east side of Millers Camp Branch, 0.8 mile south of Harper; authority, New River Collieries Co.; elevation, 2118.6′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	6	0	6	0	
Shale, sandy	54	0	60	0	
Sandstone, very hard	100	2	160	2	
Slate, black	37	1	197	3	
Slate, gray	8	0	205	3	
Slate	62	2	267	5	
Coal, Sewell	4	3½	271	8½	271′ 8½″
Shale, sandy	71	6½	343	3	
Sandstone	65	2	408	5	
Shale, sandy	46	0	454	5	
Sandstone, blue	73	0	527	5	
Shale, sandy	3	7	531	0	
Coal, Beckley	5	7	536	7	264′ 10½″
Fire clay to bottom	6	1	542	8	

Crab Orchard Coal & Land Co. Core Test No. 29 (98).

Trap Hill District, on east side of Millers Camp Branch, 1.0 mile south of Harper; authority, New River Collieries Co.; elevation, 2099.36′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	13	0	13	0	
Sandstone	12	10	25	10	
Sandstone, hard, broken	15	0	40	10	
Sandstone, soft	15	3	56	1	
Shale, black	1	0	57	1	
Sandstone, very hard	50	2	107	3	
Sandstone, conglomerate	8	2	115	5	
Sandstone, very hard	8	5	123	10	
Shale, sandy	41	10	165	8	
Sandstone, gray	23	9	189	5	
Slate, black	21	0	210	5	
Coal, Sewell "A"	0	4	210	9	210′ 9″

		Thickness. Ft.	In.	Total. Ft.	In.	
Slate		28	7	239	4	
Coal 0′ 1″						
Coal, core lost.. 3 9						
Coal 0 9						
Slate 1 7						
Shale, sandy.... 0 5	Sewell	8	10	248	2	37′ 5″
Slate 0 7						
Slate, black..... 0 6						
Coal 0 10						
Coal, core lost.. 0 4						
Slate		9	0	257	2	
Shale		19	1	276	3	
Slate		2	4	278	7	
Coal blossom, Welch		0	8	279	3	31′ 1″
Shale, sandy		38	5	317	8	
Sandstone, hard		8	0	325	8	
Shale, sandy		19	7	345	3	
Slate		17	0	362	3	
Shale, sandy		28	2	390	5	
Sandstone		4	0	394	5	
Shale, sandy		21	5	415	10	
Sandstone		26	9	442	7	
Sandstone, coal streaks		44	9	487	4	
Shale, sandy		2	5	489	9	
Sandstone		15	6	505	3	
Coal 9′ 0″	Beckley and					
Coal and bone.. 0 7	Fire Creek?	9	7	514	10	235′ 7″
Slate, black		1	0	515	10	
Core (in hole) to bottom		0	2	516	0	

The foregoing boring shows both the Sewell and Beckley Coals of minable thickness at this locality.

Crab Orchard Coal & Land Co. Core Test No. 18 (99).

Trap Hill District, on east side of Millers Camp Branch, one mile south of Harper; authority, New River Collieries Co.; elevation, 2094.8′ B.; published in Volume II(A), page 79, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	9	0	9	0
Sandstone	5	6	14	6
Shale, sandy	1	0	15	6
Sandstone	1	6	17	0
Shale, sandy	7	6	24	6
Sandstone	2	6	27	0
Shale, sandy	0	10	27	10
Sandstone .....95′ 8″				
Shale, dark.....24 11 — Guyandot	124	4	152	2
Sandstone and shale 3 9				
Shale, dark	22	10	175	0
Slate, black	4	5	179	5

		Thickness. Ft.	In.	Total. Ft.	In.
Bony coal and slate, Sewell "A".....		1	4	180	9
Sandstone ..... 8′ 8″					
Sandstone and shale 13 9	Lower Guyandot..	38	2	218	11
Sandstone 15 9					
Shale, dark		4	4	223	3
Slate and coal.. 0′ 6″					
Coal 1 3					
Slate 0 0¾	Sewell.....	5	6	228	9
Coal 0 11¼					
Slate 0 8					
Coal 2 1					
Slate, soft		0	8	229	5
Shale, dark		9	2	238	7
Coal, "Split" from Sewell.....		0	5	239	0
Shale, sandy, to bottom		3	6	242	6

The foregoing boring only penetrates through the Sewell bed and was not drilled to the lower coals.

Crab Orchard Coal & Land Co. Core Test No. 27 (100).

Trap Hill District, 0.7 mile northeast from Eccles; authority, New River Collieries Co.; elevation, 2176′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		8	0	8	0	
Sandstone		2	0	10	0	
Shale, dark		4	0	14	0	
Sandstone		9	0	23	0	
Slate, black		1	0	24	0	
Sandstone		33	0	57	0	
Shale, dark		33	0	90	0	
Sandstone		26	6	116	6	
Slate, gray		1	6	118	0	
Sandstone		45	0	163	0	
Slate, black		25	0	188	0	
Shale, gray		6	0	194	0	
Slate, dark		39	0	233	0	
Shale, gray		4	0	237	0	
Slate, gray		31	0	268	0	
Coal ..... 4′ 0″						
Bone 0 3	Sewell.....	5	6	273	6	273′ 6″
Coal 1 3						
Shale, gray		1	6	275	0	
Shale, sandy		6	0	281	0	
Fire clay		4	0	285	0	
Slate, dark		16	0	301	0	
Shale, sandy		8	0	309	0	
Sandstone		36	0	345	0	
Shale, sandy		5	0	350	0	
Slate, black		2	7	352	7	
Coal		0	5	353	0	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy		18	0	371	0	
Slate, gray		43	0	414	0	
Sandstone		5	0	419	0	
Shale, gray		2	0	421	0	
Sandstone		8	0	429	0	
Slate, dark		11	0	440	0	
Coal		1	0	441	0	
Shale, gray		4	0	445	0	
Sandstone, hard, black		71	0	516	0	
Sandstone, soft, red		18	6	534	6	
Coal 2′ 0″						
Slate 0 0¼						
Coal 1 2						
Bone 0 1	Beckley and					
Coal 3 2	Fire Creek?	11	3¼	545	9¼	272′ 3¼″
Slate and coal. 1 6						
Coal 2 4						
Slate and coal. 1 0						
Slate		0	4	546	1¼	
Fire clay to bottom		0	6	546	7¼	

Crab Orchard Coal & Land Co. Core Test No. 26 (101).

Trap Hill District, 0.5 mile northeast of Eccles; authority, New River Collieries Co.; elevation, 2107.0′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		3	8	3	8	
Sandstone, hard		90	1	93	9	
Slate, dark		60	0	153	9	
Slate, black		9	2	162	11	
Shale, dark, sandy		5	10	168	9	
Fire clay, dark		1	9	170	6	
Sandstone, dark		13	6	184	0	
Sandstone, light		15	6	199	6	
Shale, sandy, dark		8	6	208	0	
Slate		0	9	208	9	
Coal, slaty or impure 1′ 0″						
Slate 0 11	Sewell	6	0	214	9	214′ 9″
Coal 2 4						
Shale 0 10						
Coal 0 11						
Fire clay		3	4	218	1	
Shale, sandy		9	8	227	9	
Slate, black		22	5	250	2	
Coal, Welch		0	7	250	9	36′ 0″
Shale, sandy		4	0	254	9	
Sandstone		14	4	269	1	
Shale, sandy		8	9	277	10	
Shale, sandy, dark		16	8	294	6	
Sandstone		10	0	304	6	
Shale, sandy		27	2	331	8	
Sandstone		6	0	337	8	
Shale, sandy		8	5	346	1	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, blue, shaly	2	7	348	8	
Shale, sandy	26	2	374	10	
Coal	0	4	375	2	
Fire clay	1	10	377	0	
Shale, sandy	7	7	384	7	
Sandstone	2	4	386	11	
Shale, sandy	1	5	388	4	
Sandstone	70	4	458	8	
Coal, Beckley	6	5½	465	1½	214′ 4½″
Bone	0	3	465	4½	
Fire clay to bottom	8	2½	473	7	

The **Sewell Coal** appears impure, while the **Beckley Coal** shows a thickness of 6′ 5½″ at this point.

The **Crab Orchard Coal & Land Co. Core Test No. 2 (102),** on the east side of Millers Camp Branch of Coal River, 0.5 mile north of Eccles, published on pages 59-60 of Volume II(A) of W. Va. Geological Survey Reports, is republished in the section for Eccles, page 64. The detailed section of the **Sewell** bed in this boring shows it split with several divisions of slate, but having about 4 feet of solid coal in the bottom, while the **Beckley** bed has assumed a good (7′ 10″) thickness at only 258½′ below the Sewell seam.

No. 21 boring is located about 0.4 mile due **north** from Eccles, and its record is as follows:

Crab Orchard Coal & Land Co. Core Test No. 21 (103).

Trap Hill District, on east side of Millers Camp Branch, 0.4 mile due north of Eccles; authority, New River Collieries Co.; elevation, 2083.7′ L.; published on pages 82-3 of Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	9	0	9	0
Sandstone	25	0	34	0
Shale, dark	42	0	76	0
Sandstone	6	6	82	6
Sandstone and shale	20	0	102	6
Shale, dark	12	2	114	8
Slate, black	5	10	120	6
Slate, coal and bone	4	0	124	6
Fire clay	11	6	136	0
Sandstone and shale, coal	2	0	138	0
Slate, black	1	7	139	7

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal 0′ 1″						
Slate 1 9						
Bone 0 1						
Coal 0 3½						
Binder, sulphur.. 0 2½	Sewell	6	6	146	1	146′ 1″
Coal 1 4						
Slate 1 6						
Coal 1 3						
Shale, sandy		2	2	148	3	
Sandstone		7	8	155	11	
Fire clay		3	8	159	7	
Sandstone		2	8	162	3	
Shale, dark		16	0	178	3	
Slate, black		1	8	179	11	
Coal, Welch		0	8	180	6	34′ 5″
Fire clay		3	6	184	0	
Sandstone		5	4	189	4	
Shale and sandstone		7	4	196	8	
Slate		9	11	206	7	
Shale, sandy		4	10	211	5	
Sandstone and shale		9	0	220	5	
Sandstone		6	3	226	8	
Slate, black		0	8	227	4	
Fire clay		2	9	230	1	
Sandstone, Upper Raleigh		78	4	308	5	
Slate		2	4	310	9	
Fire clay, **Little Raleigh Coal horizon.**		1	8	312	5	131′ 11″
Shale, sandy		7	0	319	5	
Sandstone and shale 11′ 0″ / Sandstone 179 10	Lower Raleigh	190	10	510	3	
Shale and sandstone		27	8	537	11	
Sandstone		6	8	544	7	
Shale, sandy, to bottom		4	10	549	5	

The foregoing boring shows a thick bed of the Sewell Coal, but the Beckley Coal has been entirely cut out at this point by the immense development of the Lower Raleigh Sandstone.

Crab Orchard Coal & Land Co. Core Test No. 23 (104).

Trap Hill District, on east side of Millers Camp Branch, N. 28° E. 0.4 mile from Eccles; authority, New River Collieries Co.; elevation, 2119.8′ L.; published on pages 83-4 of Volume II(A) of Survey Reports.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		10	0	10	0	
Shale, soft		7	0	17	0	
Sandstone 82′ 6″ / Shale, dark 14 0 / Shale, and sandstone 17 3	Guyandot	113	9	130	9	

PLATE XII.—Quinnimont Sandstone just east of Raleigh Station.

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, dark	18	3	149	0	
Slate, black	7	6	156	6	
Bone coal and slate, Sewell "A"	6	6	163	0	163′ 0″
Fire clay	14	0	177	0	
Sandstone	15	3	192	3	
Coal 2′ 2″					
Slate 0 1					
Coal 0 6					
Slate 1 6 } **Sewell**	9	2	201	5	38′ 5″
Coal 2 8					
Slate 1 10					
Coal 0 5					
Shale, dark	2	0	203	5	
Sandstone and shale	11	11	215	4	
Shale, dark	13	2	228	6	
Slate, black	2	4	230	10	
Coal, Welch	0	9	231	7	30′ 2″
Shale, sandy	28	6	260	1	
Slate, black	2	8	262	9	
Shale, sandy	8	7	271	4	
Shale and sandstone	10	10	282	2	
Slate and shale, black	1	0	283	2	
Sandstone 20′ 6″					
Shale, sandy 3 6 } **Upper**					
Sandstone and shale 40 3 } **Raleigh**	64	3	347	5	
Coal, Little Raleigh "A"	0	5	347	10	116′ 3″
Sandstone	8	7	356	5	
Shale, sandy	3	4	359	9	
Slate	4	8	364	5	
Coal, Little Raleigh	1	5	365	10	18′ 0″
Slate, black	0	2	366	0	
Sandstone and shale	11	5	377	5	
Fire clay	1	0	378	5	
Sandstone, **Lower Raleigh**	63	5	441	10	
Slate **(Beckley Coal horizon?)**	0	1	441	11	76′ 1″
Sandstone	15	8	457	7	
Slate	0	2	457	9	
Sandstone	25	0	482	9	
Sandstone and shale, to bottom	1	0	483	9	

The foregoing boring shows the Sewell bed of fair thickness and purity, but the Beckley is absent unless it lies below the bottom of the boring which hardly appears probable in view of the interval.

Crab Orchard Coal & Land Co. Core Test No. 25 (105).

Trap Hill District, on west side of Millers Camp Branch, 0.5 mile north of Eccles; authority, New River Collieries Co.; elevation, 2086.9′ L.

	Thickness. Ft. In.	Total. Ft. In.	
Surface	9 0	9 0	
Sandstone	58 3	67 3	
Shale, dark, sandy	36 1	103 4	
Sandstone	15 4	118 8	
Shale, dark	15 2	133 10	
Slate, gray	8 6	142 4	
Coal, Sewell "A"	0 7	142 11	142′ 11″
Slate, black, coal streaks	3 3	146 2	
Slate, black	0 8	146 10	
Fire clay	5 2	152 0	
Shale, sandy	17 2	169 2	
Sandstone	2 2	171 4	
Coal 2′ 0″ **Coal, bony** 1 4 Slate, black 1 10 **Coal** 2 4½ Slate, black 0 5½ **Coal** 1 4 — **Sewell**	9 4	180 8	37′ 9″
Sandy shale	2 1	182 9	
Sandstone	8 5	191 2	
Fire clay	4 6	195 8	
Slate, gray	16 0	211 8	
Slate, black	1 10	213 6	
Coal, Welch	0 3	213 9	33′ 1″
Shale, dark, sandy	24 1	237 10	
Slate, gray	7 5	245 3	
Slate, dark, shaly	16 0	261 3	
Slate, gray	1 5	262 8	
Fire clay	3 7	266 3	
Shale, sandy	2 0	268 3	
Sandstone 4′ 3″ Sandstone and shale 14 4 Shale, sandy 5 8 Sandstone and shale 11 9 Sandstone 5 3 Sandstone and shale 3 6 Sandstone 12 3 Shale, sandy 8 2 Sandstone and shale 7 3 Sandstone 4 10 — **Upper Raleigh**	77 3	345 6	
Slate, gray	5 5	350 11	
Coal, Little Raleigh	0 6	351 5	137′ 8″
Fire clay	1 3	352 8	
Shale, sandy	11 4	364 0	
Sandstone, **Lower Raleigh**	78 5	442 5	
Coal, Beckley and Fire Creek?	8 4½	450 9½	99′ 4½″
Slate, black, to bottom			

Crab Orchard Coal & Land Co. Core Test No. 24 (106).

Trap Hill District, on east side of Millers Camp Branch, 0.4 mile north of Eccles; authority, New River Collieries Co.; elevation, 2150.6′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface and soft shale		46	0	46	0	
Shale and sandstone		16	0	62	0	
Sandstone		71	0	133	0	
Shale, dark		12	0	145	0	
Sandstone and shale		17	0	162	0	
Shale, dark		14	3	176	3	
Slate, black		1	8	177	11	
Slate, soft		2	3	180	2	
Shale		5	10	186	0	
Slate, coal streaks		8	9	194	9	
Fire clay		22	4	217	1	
Shale, sandy		5	7	222	8	
Slate, black		1	6	224	2	
Coal 2′ 5″ Coal, bony 0 6 Slate, black 0 11 Coal 1 11 Slate, black 7 4 Coal 1 4	Sewell	14	5	238	7	238′ 7″
Fire clay		0	5	239	0	
Shale, sandy		3	5	242	5	
Sandstone		3	6	245	11	
Fire clay		7	9	253	8	
Shale, black		17	10	271	6	
Coal 0′ 1″ Slate 0 1 Coal 0 2	Welch	0	4	271	10	33′ 3″
Fire clay		6	7	278	5	
Shale, sandy		4	6	282	11	
Sandstone		3	0	285	11	
Shale, dark		1	0	286	11	
Sandstone and shale		12	7	299	6	
Slate		7	8	307	2	
Shale, sandy		11	3	318	5	
Shale, black		1	7	320	0	
Sandstone 16′ 2″ Sandstone and shale 26 4 Sandstone 40 3	Upper Raleigh	82	9	402	9	
Slate		10	3	413	0	
Coal, Little Raleigh		0	9	413	9	141′ 11″
Fire clay		1	3	415	0	
Shale and sandstone		10	9	425	9	
Sandstone 64′ 5″ Slate 0 6 Sandstone 30 10	Lower Raleigh	95	9	521	6	
Coal 0′ 1″ Coal, impure 0 2 Coal 8 4 Slate and coal 0 8 Coal 0 10	Beckley and Fire Creek?	10	1	531	7	117′ 10″

	Thickness. Ft.	In.	Total. Ft.	In.
Slate, black	2	3	533	10
Slate, dark	7	6	541	4
Slate, black, to bottom	14	3	555	7

Crab Orchard Coal & Land Co. Core Test No. 19 (108).

Trap Hill District, on east side of Millers Camp Branch, N. 17½° E. 0.5 mile from Eccles; authority, New River Collieries Co.; elevation, 2103.8′ L.; published in Volume II(A), pages 80-1, of Survey Reports.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		2	6	2	6	
Shale and sandstone ....14′ 2″ Sandstone, hard 38 6 Shale, dark ....15 3 Shale, dark..... 0 2 Sandstone and slate 26 5	Guyandot....	94	6	97	0	
Shale, dark		5	0	102	0	
Slate, black		2	2	104	2	
Fire clay		3	10	108	0	
Shale and sandstone,	Lower Guyandot	72	0	180	0	
Coal ..... 1′ 4″ Slate ..... 0 1 Coal ..... 0 3½ Bone ..... 0 1½ Coal ..... 0 2½ Slate ..... 0 1½ Coal 2 8	Sewell.....	4	10	184	10	184′ 10″
Slate, black		11	5	196	3	
Coal, "Split" from Sewell		1	5	197	8	
Slate		0	4	198	0	
Fire clay		0	9	198	9	
Shale		4	10	203	7	
Fire clay		3	0	206	7	
Shale, dark		18	0	224	7	
Slate, black		4	1	228	8	
Coal ..... 0′ 3″ Slate ..... 0 2 Coal 0 6	Welch.....	0	11	229	7	44′ 9″
Fire clay		0	6	230	1	
Shale and sandstone		16	10	246	11	
Sandstone .... 7′ 5″ Shale ..... 7 2 Slate .....12 6 Sandstone and shale ..... 5 9 Fire clay..... 1 9 Sandstone ..... 3 8 Shale and sandstone.....35 1 Sandstone 9 10	Upper Raleigh....	83	2	330	1	
Slate		2	5	332	6	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, Little Raleigh	0	3	332	9	103′ 2″
Shale, sandy	13	5	346	2	
Sandstone	0	8	346	10	
Shale, dark	16	9	363	7	
Slate, black	0	3	363	10	
Coal, Little Raleigh	1	0	364	10	32′ 1″
Slate, black	0	5	365	3	
Shale, dark	4	10	370	1	
Sandstone and shale 6′ 6″ / Sandstone 57 8 — **Lower Raleigh**	64	2	434	3	
Slate	0	2	434	5	
Sandstone	6	0	440	5	
Coal, soft 3′ 5″ / **Coal,** semi-soft 3 1 — **Beckley**	6	6	446	11	82′ 1″
Slate	0	10	447	9	
Shale, dark, to bottom	26	9	474	6	

Crab Orchard Coal & Land Co. Core Test No. 10 (109).

Trap Hill District, on waters of Jehu Branch, 0.6 mile east from Eccles; authority, New River Collieries Co.; elevation, 2159′ L.; published in Volume II(A), pages 70-1, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	10	0	10	0	
Sandstone, hard	9	5	19	5	
Shale, sandy, dark	1	0	20	5	
Sandstone, hard	2	0	22	5	
Shale, sandy, dark	5	0	27	5	
Sandstone, hard 23′ 11″ / Sandstone and shale 7 6 / Sandstone, hard 32 2 / Shale, sandy, dark 10 6 / Sandstone and shale 36 3 — **Guyandot**	110	4	137	9	
Slate	16	0	153	9	
Fire clay	2	9	156	6	
Sandstone	2	6	159	0	
Shale, sandy, dark	13	5	172	5	
Slate	5	3	177	8	
Slate and coal, Sewell	5	4	183	0	183′ 0″
Sandstone	14	6	197	6	
Dirty coal	2	6	200	0	
Slate	4	0	204	0	
Shale, sandy, dark	5	0	209	0	
Slate and **coal**	2	0	211	0	
Coal, dirty	1	6	212	6	
Fire clay	3	7	216	1	
Sandstone and shale	12	6	228	7	
Shale, sandy, dark	9	4	237	11	
Sandstone	8	2	246	1	
Coal, Welch	0	6	246	7	63′ 7″
Fire clay	1	0	247	7	

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone ..... 8′ 7″ Shale, sandy....19 3 Slate ..... 6 10 Sandstone .....18 1 Shale, sandy, dark 44 9	Upper Raleigh...	97	6	345	1	
Coal		0	4	345	5	
Sandstone and shale.....		11	10	357	3	
Shale, sandy, dark.....		13	0	370	3	
Coal, dirty, Little Raleigh.....		1	0	371	3	124′ 8″
Fire clay.....		2	0	373	3	
Shale, sandy, dark.....		2	8	375	11	
Sandstone .....52′ 4″ Sandstone and shale ..... 3 3 Slate ..... 0 5 Sandstone 29 0	Lower Raleigh...	85	0	460	11	
Coal, Beckley.....		6	7	467	6	96′ 3″
Shale, sandy, dark.....		1	8	469	2	

Crab Orchard Coal & Land Co. Core Test No. 32 (110).

Trap Hill District, on west side of Millers Camp Branch, 0.1 mile south of Eccles; authority, New River Collieries Co.; elevation, 2085.71′ L.

		Thickness. Feet.	Total. Feet.	
Surface		20.0	20.0	
Shale, dark.....		26.5	46.5	
Sandstone		12.0	58.5	
Shale, dark.....		9.0	67 5	
Coal, Sewell "A".....		0.17	67.67	67.67′
Fire clay.....		3.5	71.17	
Shale, dark.....		20.33	91.5	
Slate, dark.....		4.5	96.0	
Slate and fire clay.....		4.5	100.5	
Sandstone		20.5	121.0	
Shale, dark.....		6.0	127.0	
Coal .....0.38′ Binder .....0.04 Coal .....1.33 Slate, dark.....2.50 Coal 2.50	Sewell.....	6.75	133.75	66.08′
Slate, dark.....		1.42	135.17	
Slate and fire clay.....		9.0	144.17	
Coal		1.5	145.67	
Fire clay.....		3.33	149.0	
Shale, dark.....		11.0	160.0	
Sandstone		5,5	165.5	
Shale, dark.....		10 5	176.0	
Sandstone		31.0	207.0	
Shale, dark.....		22.0	229.0	
Sandstone, hard.....		72.0	301.0	
Shale		12.0	313.0	
Slate, black.....		1.0	314.0	

		Thickness. Feet.	Total. Feet.	
Coal, Little Raleigh		0.33	314.33	180.58′
Shale		20.67	335.0	
Sandstone		58.0	393.0	
Shale, dark		11.0	404.0	
Sandstone		12.25	416.25	
Slate, black		0.25	416.5	
Coal 2.17′ / **Coal** and sulphur. 0.19 / **Coal** 4.58 / Slate 0.13 / **Coal**, bony 0.85 / **Coal** 3.08	**Beckley and Fire Creek**	11.0	427.5	113.17′
Slate and fire clay, to bottom		4.75	432.25	

Crab Orchard Coal & Land Co. Core Test No. 1 (111).

Trap Hill District, at mouth of Jehu Branch, 0.2 mile south of Eccles; authority, New River Collieries Co.; elevation, 2074.0′ L.; published in Volume II(A), pages 58-9, of Survey Reports.

		Thickness. Ft.	In.	Total. Ft.	In.	
Surface		27	0	27	0	
Shale, sandy		8	0	35	0	
Slate		18	0	53	0	
Sandstone		0	6	53	6	
Fire clay		4	6	58	0	
Shale, sandy		12	4	70	4	
Slate, black		2	2	72	6	
Coal, Sewell "A"		1	10	74	4	74′ 4″
Fire clay		1	2	75	6	
Sandstone		9	1	84	7	
Coal, Sewell		5	5	90	2	15′ 8″
Shale and fire clay		19	0	109	2	
Coal, "Sewell" Split		0	10	110	0	19′ 10″
Fire clay		4	0	114	0	
Sandstone		16	0	130	0	
Slate, black		5	4	135	4	
Coal		0	2	135	6	
Fire clay		1	6	137	0	
Sandstone		20	6	157	6	
Shale, sandy		19	0	176	6	
Shale, dark		11	4	187	10	
Sandstone, hard. 21′ 7″ / Shale, sandy 1 2 / Sandstone, hard. 32 11 / Shale 0 7 / Sandstone, hard. 16 10	**Upper Raleigh**	73	1	260	11	
Shale, light, sandy		8	4	269	3	
Slate, black		1	10	271	1	
Coal, Little Raleigh		0	3	271	4	161′ 4″
Fire clay shale		3	0	274	4	
Sandstone 67′ 3″ / Shale, dark 11 0 / Sandstone 37 9	**Lower Raleigh**	116	0	390	4	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, Lower Beckley	1	11	392	3	120′ 11″
Fire clay	0	8	392	11	
Slate, black	3	4	396	3	
Rock, hard	0	10	397	1	
Slate, black	2	0	399	1	
Coal	0	2	399	3	
Fire clay, mixed	4	0	403	3	
Sandstone	39	0	442	3	
Shale	0	6	442	9	
Sandstone	2	7	445	4	
Shale to bottom	16	6	461	10	

Crab Orchard Coal & Land Co. Core Test No. 6 (112).

Trap Hill District, on Jehu Branch, 0.4 mile southeast of Eccles; authority, New River Collieries Co.; elevation, 2112.0′ L.; published on pages 66-7 of Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	27	7	27	7	
Shale, dark	8	6	36	1	
Fire clay	4	0	40	1	
Shale, with sandy places	31	6	71	7	
Shale, blue	19	4	90	11	
Coal, Sewell "A"	0	2	91	1	91′ 1″
Fire clay	0	6	91	7	
Sandstone, dark	7	11	99	6	
Shale, sandy	1	8	101	2	
Slate	1	4	102	6	
Sandstone, dark	1	7	104	1	
Shale, white	2	2	106	3	
Sandstone, dark	0	8	106	11	
Sandstone, white	0	11	107	10	
Sandstone, very hard	5	1	112	11	
Shale, sandy, blue	15	6	128	5	
Slate, black	0	3	128	8	
Coal, Sewell	2	9	131	5	40′ 4″
Slate, black	19	1	150	6	
Bone 0′ 6″ / **Coal** 0 3 — **Sewell "Split"**	0	9	151	3	
Fire clay	3	5	154	8	
Shale, sandy, dark	9	5	164	1	
Sandstone	1	1	165	2	
Shale, blue	9	2	174	4	
Shale, black	3	9	178	1	
Coal, Welch	0	2	178	3	46′ 10″
Fire clay	1	8	179	11	
Shale, sandy, dark	5	1	185	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, very hard .....31′ 6″ Shale, sandy, dark ..... 7 7 Sandstone, dark. 9 9 Shale, sandstone partings ....41 2 Sandstone, very hard .....10 5 — Upper Raleigh...	100	5	285	5	
Shale, sandy, dark.....	5	8	291	1	
Sandstone, shale partings.....	1	6	292	7	
Shale, sandy, white.....	5	5	298	0	
Shale, dark blue.....	6	5	306	5	
Slate	0	4	306	9	
Coal, Little Raleigh.....	0	10	307	7	129′ 4″
Fire clay.....	1	1	308	8	
Shale, dark, sandy.....	19	2	327	10	
Sandstone, fine, white .....12′ 0″ Sandstone, coarse..41 3 Shale with sandstone partings ..... 2 0 Shale, sandstone partings ..... 6 9 Sandstone, soft....11 2 Shale, sandstone partings ..... 7 4 Sandstone ..... 9 3 — Lower Raleigh.	89	9	417	7	
Shale, blue.....	5	8	423	3	
Shale, black.....	1	2	424	5	
Coal, Beckley.....	3	2	428	1	120′ 6″
Fire clay.....	0	6	428	7	
Shale, sandy, dark.....	80	4	508	11	
Fire clay, **Fire Creek Coal horizon**....	5	6	514	5	86′ 4″
Shale, sandy, dark.....	0	9	515	2	
Limestone	0	11	516	1	
Shale, sandstone partings.....	8	2	524	3	
Shale, sandy, dark.....	24	4	548	7	
Shale, white.....	2	4	550	11	
Shale, blue, sandstone partings.....	33	1	584	0	
Coal, No. 8 Pocahontas.....	0	11	584	11	70′ 6″
Fire clay.....	2	6	587	5	
Shale, sandy, light.....	20	6	607	11	
Shale, dark.....	16	5	624	4	
Shale, sandstone partings.....	17	6	641	10	
Sandstone, shale partings.....	3	5	645	3	
Sandstone, very hard.....	43	4	688	7	
Shale, sandstone partings.....	4	7	693	2	
Sandstone, very hard.....	6	0	699	2	
Shale, sandstone partings.....	5	7	704	9	
Sandstone, very hard.....	1	2	705	11	
Shale, sandstone partings.....	4	3	710	2	
Sandstone	22	2	732	4	
Sandstone, shale partings.....	23	6	756	0	
Shale, sandy, dark.....	3	0	759	0	
Coal, No. 3 Pocahontas.....	3	6	762	6	177′ 7″
Fire clay to bottom.....	2	0	764	6	

The coal encountered at 762′ 6″ is very probably the **No. 3 Pocahontas** bed, and appears here of sufficient thickness and purity to be of commercial value.

Crab Orchard Coal & Land Co. Core Test No. 9 (114).

Trap Hill District, on Jehu Branch, S. 70° E. 0.8 mile from Eccles; authority, New River Collieries Co.; elevation, 2146′ L.; published in Volume II(A), pages 69-70, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	6	0	6	0	
Shale, soft	7	0	13	0	
Coal, Sewell "B"	0	2	13	2	13′ 2″
Shale, sandy, dark	66	5	79	7	
Shale, sandy, hard	19	6	99	1	
Coal, Sewell	2	6	101	7	88′ 5″
Fire clay and shale	8	9	110	4	
Shale, dark	7	0	117	4	
Shale, sandy, hard	17	6	134	10	
Shale, sandy, dark	9	3	144	1	
Coal	0	10	144	11	
Fire clay, soft	7	4	152	3	
Shale, sandy, dark	24	0	176	3	
Coal, Welch	0	5	176	8	75′ 1″
Shale and fire clay	4	0	180	8	
Shale, sandy, dark	10	2	190	10	
Sandstone	5	0	195	10	
Slate	0	6	196	4	
Coal, Welch "Split"	0	4	196	8	
Shale, dark	9	0	205	8	
Slate, black	1	6	207	2	
Fire clay	3	0	210	2	
Shale, sandy	4	2	214	4	
Sandstone, hard....31′ 1″					
Shale, sandy, dark.23 9					
Shale, dark.....36 7 — Upper					
Shale, sandy..... 4 4 — Raleigh.	102	10	317	2	
Shale, dark..... 2 5					
Sandstone 4 8					
Fire clay, **Little Raleigh Coal horizon**	2	2	319	4	142′ 8″
Shale, sandy, dark	9	1	328	5	
Sandstone ..... 4′ 4″					
Sandstone and shale .....11 6 — Lower					
Sandstone .....21 8 — Raleigh	62	9	391	2	
Shale, dark..... 5 0					
Sandstone 20 3					
Coal, Beckley	0	3	391	5	72′ 1″
Slate, soft, black	11	7	403	0	
Shale, dark	11	2	414	2	
Slate, soft, black	10	5	424	7	
Coal, Fire Creek	1	4	425	11	34′ 6″
Sandstone to bottom	34	4	460	3	

Crab Orchard Coal & Land Co. Core Test No. 28 (115).

Trap Hill District, on Jehu Branch, 0.5 mile southeast of Eccles; authority, New River Collieries Co.; elevation, 2128.55′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	17	0	17	0	
Shale, sandy	8	9	25	9	
Sandstone	3	2	28	11	
Shale, sandy	14	11	43	10	
Sandstone, hard	2	8	46	6	
Shale, sandy	1	7	48	1	
Sandstone, very hard	13	10	61	11	
Sandstone, hard	39	11	101	10	
Shale, sandy	0	4	102	2	
Sandstone, very hard	0	9	102	11	
Shale, sandy	0	6	103	5	
Sandstone, very hard	25	7	129	0	
Sandstone	14	10	143	10	
Slate, dark	20	8	164	6	
Shale, light, sandy	1	6	166	0	
Sandstone, very hard	0	9	166	9	
Sandstone	4	3	171	0	
Shale, black	2	1	173	1	
Slate, black	22	0	195	1	
Shale, dark, sandy	18	4	213	5	
Shale, dark	37	4	250	9	
Slate	1	7	252	4	
Coal 3′ 3″ Slate, black 1 2 Bone 0 4 Coal 0 7 — Sewell	5	4	257	8	257′ 8″
Shale, sandy	40	0	297	8	
Sandstone	30	8	328	4	
Slate	4	11	333	3	
Sandstone, very hard	14	9	348	0	
Shale, sandy	80	0	428	0	
Coal, Little Raleigh	0	10	428	10	171′ 2″
Fire clay	3	0	431	10	
Sandstone 21′ 10″ Shale, sandy 4 0 Sandstone 42 5 — Lower Raleigh	68	3	500	1	
Shale, sandy	5	5	505	6	
Sandstone	0	2	505	8	
Coal 2′ 4″ Coal (ground up core) 1 8 — Beckley	4	0	509	8	80′ 10″
Slate	9	10½	519	6½	
Coal, Beckley "Split"	0	1	519	7½	
Shale, sandy, to bottom	23	7½	543	3	

Crab Orchard Coal & Land Co. Core Test No. 31 (116).

Trap Hill District, on south side of Jehu Branch, 0.7 mile southeast of Eccles; authority, New River Collieries Co.; elevation, 2325.88′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	18	0	18	0	
Sandstone	33	0	51	0	
Shale, dark	27	0	78	0	
Sandstone	106	0	184	0	
Slate	5	0	189	0	
Coal	0	1	189	1	
Shale	80	0	269	1	
Sandstone	4	8	273	9	
Slate	0	3	274	0	
Bone ..... 0′ 2″					
Coal ..... 1 9 } Sewell	3	2	277	2	277′ 2″
Sulphur 0 1					
Coal 1 2					
Fire clay	4	0	281	2	
Sandstone, shaly	20	0	301	2	
Shale	61	0	362	2	
Sandstone, shaly	30	0	392	2	
Fire clay	4	0	396	2	
Shale	38	0	434	2	
Slate, black	2	10	437	0	
Coal	0	2	437	2	
Slate, black	1	0	438	2	
Fire clay	4	0	442	2	
Shale	18	0	460	2	
Slate, black	18	6	478	8	
Coal, Beckley	0	4	479	0	201′ 10″
Shale	8	0	487	0	
Sandstone	85	0	572	0	
Shale	21	0	593	0	
Sandstone	14	0	607	0	
Coal, Fire Creek	2	10	609	10	130′ 10″
Fire clay	0	8	610	6	
Sandstone, shaly, to bottom	6	6	617	0	

Crab Orchard Coal & Land Co. Core Test No. 15 (117).

Trap Hill District, on south side of Jehu Branch, S. 45° E. one mile from Eccles; authority, New River Collieries Co.; elevation, 2210.0′ L.; published in Volume II(A), pages 77-8, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	5	6	5	6
Sandstone	23	6	29	0
Shale, sandy	11	6	40	6
Sandstone	7	0	47	6
Shale, sandy, dark	30	0	77	6
Slate, black	6	3	83	9
Shale, sandy, dark	25	2	108	11

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone ..... 1′ 5″ Sandstone and shale .....27 0 Sandstone, hard. 8 2 Sandstone and shale, hard..11 6 Shale, sandy.... 7 4 Sandstone 8 9	Lower Guyandot.	64	2	173	1	
Shale, sandy, dark		1	7	174	8	
Fire clay, impure, **Sewell**		1	9	176	5	176′ 5″
Sandstone, hard		17	0	193	5	
Shale, sandy		3	2	196	7	
Shale, black		9	9	206	4	
Coal and slate...0′ 2″ **Coal** 0 1	**Welch**	0	3	206	7	30′ 2″
Shale, dark, sandy		0	2	206	9	
Fire clay		2	0	208	9	
Shale, sandy		7	0	215	9	
Fire clay		2	6	218	3	
Shale, dark, sandy		10	2	228	5	
Sandstone, **Upper Raleigh**		76	3	304	8	
Shale, dark, sandy		22	4	327	0	
Slate, black		2	6	329	6	
Coal, Little Raleigh		0	4	329	10	113′ 3″
Fire clay		1	2	341	0	
Shale, dark, sandy		7	8	348	8	
Slate, black		7	3	355	11	
Coal, Little Raleigh		0	1½	356	0½	26′ 2½″
Slate, soft		0	11½	357	0	
Fire clay		0	10	357	10	
Shale, sandy		7	0	364	10	
Sandstone and shale		9	2	374	0	
Sandstone, **Lower Raleigh**		73	3	447	3	
Coal .....2′ 8 ″ **Coal, bony**.....0 0½ **Coal** .....2 3½ Slate, black....0 10 **Coal** 3 7	Beckley and Fire Creek	9	5	456	8	100′ 7½″
Shale, dark, sandy		6	8	463	4	
Sandstone to bottom		2	6	465	10	

The **Beaver Coal Co. (Laurel Branch) Core Test** (123), on Laurel Branch, 1.5 miles north of Glen White, is published in the Section 2.5 Miles Southeast of Glen White, page 161. Merchantable coal in the New River Group is absent at this point as is shown in the record of this core test hole.

Beaver Coal Co. Core Test No. 8 (124).

Trap Hill District, 25 feet south of Millers Camp Branch and about 500 feet above the mouth of Shockley Branch; authority, Beaver Coal Co.; completed, July, 1905; elevation, 2110′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	30	0	30	0	
Shale, black	12	0	42	0	
Coal, Sewell "B"	1	0	43	0	43′ 0″
Fire clay	1	4	44	4	
Shale, light	6	0	50	4	
Shale, blue, sandstone partings	16	2	66	6	
Shale, blue	4	0	70	6	
Shale, black	2	0	72	6	
Slate, coal partings, **Sewell "A"**	0	6	73	0	30′ 0″
Fire clay	2	0	75	0	
Shale, light	10	0	85	0	
Sandstone, **Lower Guyandot**	37	0	122	0	
Slate, black	0	3	122	3	
Coal, Sewell	1	1	123	4	50′ 4″
Fire clay	0	2	123	6	
Shale, black, sandy	1	5	124	11	
Sandstone .....21′ 0″ Shale, blue, sandy..44 7 Sandstone, shale partings .....14 6 **Shale, blue, sandy.. 8 6** Sandstone, shale partings ..... 4 0 — **Upper Raleigh**	92	7	217	6	
Shale, blue, sandy	5	0	222	6	
Shale, blue	1	6	224	0	
Shale, black, **Little Raleigh Coal horizon**	0	8	224	8	101′ 4″
Sandstone, soft, **Lower Raleigh**	83	6	308	2	
Shale, sandstone partings	2	8	310	10	
Sandstone, broken, coal partings	4	0	314	10	
Shale, blue, sandy	8	0	322	10	
Shale, blue	2	4	325	2	
Shale, black	0	4	325	6	
Coal, Beckley	3	3	328	9	104′ 1″
Shale, black	2	9	331	6	
Sandstone, shale partings, **Quinnimont**	24	4	355	10	
Shale, sandstone partings	8	0	363	10	
Shale, blue	4	6	368	4	
Shale, blue, sandy	26	6	394	10	
Sandstone	6	8	401	6	
Shale, blue	3	0	404	6	
Shale, blue, sandy	2	9	407	3	
Coal, Fire Creek	1	2	408	5	79′ 8″
Fire clay	5	3	413	8	
Shale, light	4	0	417	8	
Sandstone, shale partings	11	6	429	2	
Shale, blue	18	0	447	2	
Shale, black	1	8	448	10	
Coal	0	4	449	2	40′ 9″
Fire clay	3	6	452	8	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, light	5	6	458	2	
Shale, blue, sandy	39	0	497	2	
Sandstone	29	5	526	7	
Coal, No. 8 Pocahontas	3	1	529	8	80′ 6″
Fire clay	1	1	530	9	
Bone	1	4	532	1	
Slate, black	0	8	532	9	
Fire clay	0	5	533	2	
Shale, dark, sandy	12	6	545	8	
Shale, blue	6	2	551	10	
Shale, dark, sandy	18	7	570	5	
Sandstone, shale partings	38	6	608	11	
Sandstone, **Upper Pocahontas**	34	6	643	5	
Slate	1	0	644	5	
Coal, No. 6 Pocahontas	3	10	648	3	118′ 7″
Fire clay	2	0	650	3	
Shale, white, to bottom	1	0	651	3	

The **Crab Orchard Coal & Land Co. Core Test No. 8 (125)**, on Marsh Fork at the mouth of Surveyor Creek at Surveyor, published in Volume II(A), page 68, of Survey Reports, is republished on page 128 in the Section for Surveyor.

Rockhouse Fork Land Co. Core Test No. 2 (126).

Trap Hill District, on west side of Surveyor Creek, near Surveyor Station on C. & O. Railway; authority. C. C. Beury; elevation, 1930′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	31	7	31	7	
Shale, blue	14	5	46	0	
Shale, sandstone partings	16	6	62	6	
Shale, blue	14	3	76	9	
Slate	2	7	79	4	
Coal, Sewell	2	7	81	11	81′ 11″
Shale, blue	24	9	106	8	
Coal, Welch	2	2	108	10	26′ 11″
Fire clay	2	7	111	5	
Shale, dark, sandy	4	5	115	10	
Sandstone, very hard, **Upper Raleigh**	162	4	278	2	
Shale, dark, sandy	2	10	281	0	
Shale, sandy	4	2	285	2	
Slate, black	4	6	289	8	
Coal, bony, Little Raleigh	0	2	289	10	181′ 0″
Shale, dark	7	5	297	3	
Sandstone, **Lower Raleigh**	53	6	350	9	
Sandstone, coal partings	5	8	356	5	
Coal, Beckley	1	6	357	11	68′ 1″
Sandstone, very hard, shale partings	8	6	366	5	
Sandstone, very hard, **Quinnimont**	85	7	452	0	
Sandstone, very hard	53	3	505	3	
Sandstone, very hard	6	4	511	7	
Shale, sandstone partings	11	3	522	10	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, blue		3	2	526	0	
Slate, coal partings		1	8	527	8	
Fire clay, No. 8 Pocahontas Coal horizon		2	11	530	7	172′ 8″
Shale, light, sandy. 8′ 5″						
Shale, dark..... 1 7	Flattop					
Sandstone 15 7	Mountain	27	11	558	6	
Conglomerate to bottom 2 4						

The **Rockhouse Fork Land Co. Core Test No. 6 (127)**, at Tolley Station, published on page 65 in the Section for Tolley Station shows the Sewell Coal split and thin, while the Beckley Coal is of sufficient thickness and purity to be of commercial value. The Upper Raleigh Sandstone is split up into layers of shale and sandstone.

Rockhouse Fork Land Co. Core Test No. 4 (128).

Trap Hill District, on west side of Surveyor Creek, 0.3 mile north of Hoohoo; authority, C. C. Beury; elevation, 2001.32′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Casing		20	9	20	9	
Sandstone		10	0	30	9	
Shale, sandstone partings		15	4	46	1	
Shale, blue		1	6	47	7	
Coal, Sewell		0	6	48	1	48′ 1″
Fire clay		8	4	56	5	
Shale, blue		14	7	71	0	
Coal, Sewell "Split"		0	8	71	8	
Fire clay		2	2	73	10	
Sandstone, **Welch**		61	2	135	0	
Shale, black		0	2	135	2	
Coal, Welch		0	6	135	8	87′ 7″
Shale, black		0	10	136	6	
Sandstone ..... 3′ 6″						
Sandstone, shale partings ...13 0						
Shale, sandstone partings ...18 6						
Shale, blue, sandy 25 0	Upper Raleigh....	96	6	233	0	
Sandstone, shale partings ... 8 0						
Sandstone 7 0						
Sandstone, shale partings ... 8 6						
Shale, black..... 3 6						
Sandstone 9 6						
Slate, coal partings,	Little Raleigh...	0	10	233	10	98′ 2″

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, blue		5	2	239	0	
Sandstone, shale partings ...22′ 0″ Sandstone, soft, broken 32 10	Lower Raleigh....	54	10	293	10	
Coal, Beckley		3	3	297	1	63′ 3″
Slate, black		3	11	301	0	
Shale, blue		9	0	310	0	
Shale, blue, sandy		40	0	350	0	
Shale, blue		8	0	358	0	
Slate, black		2	0	360	0	
Coal, Fire Creek		1	8	361	8	64′ 7″
Black slate to bottom		3	4	365	0	

Rockhouse Fork Land Co. Core Test No. 1 (129).

Trap Hill District, on the O. P. Riff farm at Lester, authority, C. C. Beury; elevation, 2045.3′ L.

		Thickness. Ft.	In.	Total. Ft.	In.	
Casing		5	0	5	0	
Sandstone, **Welch**		25	0	30	0	
Shale, blue		2	0	32	0	
Slate, black		1	0	33	0	
Coal, Welch		1	4	34	4	34′ 4″
Fire clay		0	8	35	0	
Shale, blue		22	0	57	0	
Slate, black		0	8	57	8	
Coal, "Split" from Welch		0	6	58	2	
Fire clay		0	10	59	0	
Shale, blue		3	0	62	0	
Sandstone .....10′ Shale, blue.....18 Sandstone, very hard 15	Upper Raleigh....	43	0	105	0	
Shale, blue		0	8	105	8	
Coal, Little Raleigh		1	4	107	0	72′ 8″
Shale, blue		2	6	109	6	
Sandstone, very hard .....20′ 6″ Sandstone, very hard, and shale partings 9 0 Shale, blue, sandy 62 0	Lower Raleigh...	91	6	201	0	
Shale, blue		2	8	203	8	
Slate, black		0	6	204	2	
Coal, Beckley "Rider"		0	4	204	6	97′ 6″
Fire clay		1	6	206	0	
Shale, light, sandy		8	0	214	0	
Shale, blue, sandy		10	0	224	0	
Slate, black		1	6	225	6	
Shale, blue		3	0	228	6	
Slate, black		0	2	228	8	

		Thickness. Ft.	In.	Total. Ft.	In.	
Coal and bone...0′ 8″						
Shale, blue.....1 3						
Coal 0 6						
Shale, blue.....0 7						
Coal and bone....0 9	Beckley.....	7	4	236	0	31′ 6″
Slate, black.....0 8						
Fire clay.....2 3						
Slate, black.....0 2						
Coal 0 6						
Fire clay.....		0	4	236	4	
Sandstone		1	0	237	4	
Shale, sandy.....		5	0	242	4	
Sandstone, shale partings occasionally		7	8	250	0	
Sandstone, hard.....		3	10	253	10	
Shale, blue, sandy.....		3	2	257	0	
Slate, black.....		0	9	257	9	
Shale, blue, sandy.....		2	0	259	9	
Slate, black.....		0	3	260	0	
Coal, Fire Creek.....		5	4	265	4	29′ 4″
Slate, black.....		1	0	266	4	
Shale, blue, to bottom.....		5	8	272	0	

The **Rockhouse Fork Land Co. Core Test No. 4 (130)**, on **Skinner Fork of Surveyor Creek, 0.7** mile southwest from Lester, is published in the Section ½ Mile South of Lester P. O.. page 130.

The **Rockhouse Fork Land Co. Core Test No. 3A (132)**, on Surveyor Creek, S. 10° E. one mile from Lester on Giles Gray farm, is published on page 131 in the Section 1 Mile South from Lester P. O.

Rockhouse Fork Land Co. Core Test No. 2A (133).

Trap Hill District, on Surveyor Creek, 1.4 miles southeast from Lester; authority, C. C. Beury; elevation, 2099.2′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	8	0	8	0	
Sandstone, very hard, **Upper Raleigh**..	105	0	113	0	
Sandstone, blue.....	49	6	162	6	
Sandstone, **Lower Raleigh**.....	65	6	228	0	
Shale	0	9	228	9	
Coal, Beckley.....	1	4	230	1	230′ 1″
Fire clay.....	1	1	231	2	
Sandstone, slate partings, **Quinnimont**	80	4	311	6	
Shale, white.....	11	7	323	1	
Slate, sandy.....	2	1	325	2	
Coal, Fire Creek.....	3	1	328	3	98′ 2″
Fire clay.....	1	8	329	11	
Sandstone	55	0	384	11	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, blue, sandy	18	4	403	3	
Slate	3	4	406	7	
Coal, No. 9 Pocahontas	0	7	407	2	78′ 11″
Fire clay	2	11	410	1	
Sandstone	6	9	416	10	
Slate	3	5	420	3	
Coal	0	2	420	5	
Fire clay	1	2	421	7	
Slate, sandy	14	8	436	3	
Slate	12	3	448	6	
Coal 1′ 8″ / Fire clay 0 2 / **Coal** 1 11 — **No. 7 Pocahontas**	3	9	452	3	45′ 1″
Fire clay	3	4	455	7	
Shale, blue, sandy	22	6	478	1	
Fire clay	17	2	495	3	
Sandstone, very hard	21	5	516	8	
Shale, blue, sandy	5	2	521	10	
Sandstone, very hard	14	3	536	1	
Sandstone, coarse	3	4	539	5	
Shale, blue	1	8	541	1	
Sandstone, very hard	19	11	561	0	
Shale, blue	5	4	566	4	
Coal, Pocahontas No. 6 or No. 4	2	10	569	2	116′ 11″
Fire clay to bottom	2	4	571	6	

Crab Orchard Coal & Land Co. Core Test No. 14 (134).

Trap Hill District, on Stevens Branch of Marsh Fork, one mile northeast of Surveyor; authority, New River Collieries Co.; elevation, 1972.7′ L.; published on pages 76-7 of Volume II(A) of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	13	6	13	6	
Sandstone	28	6	42	0	
Slate, broken	10	0	52	0	
Slate	65	3	117	3	
Sandstone and slate	17	9	135	0	
Clay	1	3	136	3	
Sandstone, conglomerate	1	1	137	4	
Clay	0	4	137	8	
Sandstone, conglomerate	2	4	140	0	
Slate	0	2	140	2	
Sandstone, conglomerate	2	0	142	2	
Clay	0	3	142	5	
Sandstone	1	2	143	7	
Coal	0	1	143	8	143′ 8″
Sandstone, conglomerate	2	7	146	3	
Clay	0	2	146	5	
Sandstone, conglomerate	0	10	147	3	
Conglomerate and clay	8	5	155	8	
Clay	0	4	156	0	
Conglomerate	7	8	163	8	
Conglomerate and clay	3	2	166	10	
Fire clay, soft, **Sewell Coal horizon**	2	7	169	5	
Fire clay, hard	5	0	174	5	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, **Lower Guyandot**	37	3	211	8	
Slate	1	8	213	4	
Sandstone	8	6	221	10	
Sandstone and slate	13	0	234	10	
Sandstone	6	4	241	2	
Sandstone, very hard ..... 76′ 1″ Sandstone (with pebbles) .... 2 0 Sandstone, very hard .....45 6 — **Upper Raleigh...**	123	7	364	9	
Coal, Little Raleigh	0	5	365	2	221′ 6″
Sandstone, very hard	11	9	376	11	
Fire clay	0	1	377	0	
Sandstone	4	9	381	9	
Sandstone, conglomerate	0	9	382	6	
Sandstone	12	2	394	8	
Sandstone, **coal** partings. 2′ 10″ Bone .....0 2 Sandstone, **coal** partings. 4 10	7	10	402	6	
Sandstone .....28′ 5″ Slate, sandy..... 0 4 Sandstone .....17 3 Slate, sandy..... 0 1 Sandstone, very hard .....15 0 — **Lower Raleigh...**	61	1	463	7	
Bone and coal, Beckley	0	1	463	8	98′ 6″
Sandstone, very hard ..... 4′ 8″ Sandstone, very hard, slate partings ...103 6 Sandstone and slate ..... 6 9 Sandstone ..... 16 10 Sandstone and conglomerate..... 36 1 — **Quinnimont and Flattop..**	167	10	631	6	
Slate	1	5	632	11	
Coal, No. 7 Pocahontas	1	2	634	1	170′ 5″
Sandstone and shale	15	0	649	1	
Slate	1	0	650	1	
Coal, No. 6 Pocahontas	0	5	650	6	16′ 5″
Shale	4	4	654	10	
Slate, black	0	8	655	6	
Fire clay	6	6	662	0	
Shale	1	4	663	4	
Shale, green	11	10	675	2	
Shale	5	2	680	4	
Sandstone	47	11	728	3	
Slate, sandy	1	0	729	3	
Sandstone	9	0	738	3	
Coal	0	0½	738	3½	
Sandstone	19	8	757	11½	
Slate	1	3	759	2½	
Coal, No. 3 Pocahontas ?	3	0	762	2½	111′ 8½″
Shale to bottom	3	3	765	5½	

Slab Fork District.

A number of core tests have been drilled in Slab Fork District to test for the New River and Pocahontas Coals.

The **J. W. Moore et al. Core Test No. 3 (136)**, on south side of Jenny Gap Tunnel, is published in the Section for Jenny Gap, page 78.

Beaver Coal Company Core Test No. 9 (143).

Slab Fork District, on Jack Branch, 0.7 mile northeast of Slab Fork P. O.; authority, Slab Fork Coal Co.; completed, 1903; elevation 2228′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay and boulders	5	0	5	0	
Clay, sandy	15	0	20	0	
Sandstone, shaly	24	0	44	0	
Shale, dark, sandstone partings	14	0	58	0	
Sandstone	6	0	64	0	
Sandstone, hard	3	6	67	6	
Coal, Welch	0	9	68	3	68′ 3″
Shale, dark	9	0	77	3	
Sandstone, shale partings ...24′ 9″ / Shale, dark..... 9 0 / Sandstone .....34 4 — Upper Raleigh	68	1	145	4	
Coal, Little Raleigh "A"	1	8	147	0	78′ 9″
Sandstone, hard	21	0	168	0	
Shale, sandy	12	0	180	0	
Shale, sandy, dark	53	3	233	3	
Coal .....0′ 9″ / Shale .....0 11 / **Coal** .....0 1 / Shale, coal partings .....3 0 — Little Raleigh	4	9	238	0	91′ 0″
Shale, sandy	21	0	259	0	
Shale, dark	8	5	267	5	
Coal .....0′ 3 ″ / Sulphur band...0 1 / Shale, dark.....0 4 / **Coal** .....0 8½ — Beckley "Rider" ..	1	4½	268	9½	30′ 9½″
Shale, dark, sandy partings	16	2½	285	0	
Shale, dark	3	8	288	8	
Coal, Beckley	4	4	293	0	24′ 2½″
Shale, sandy	21	0	314	0	
Shale, dark	30	3	344	3	
Coal, bony.....0′ 9″ / **Coal** .....2 6 — Fire Creek..	3	3	347	6	54′ 6″
Shale, dark	1	6	349	0	
Shale, sandy	79	0	428	0	
Shale, dark	9	6	437	6	

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal .....0′ 9″					
Shale, black, coal partings .....4 9 — No. 7 Pocahontas	6	5	443	11	94′ 11″
Coal 0 11					
Sandstone, Pierpont	46	1	490	0	
Sandstone, hard	13	0	503	0	
Shale, sandy, dark	34	0	537	0	
Slate, dark	8	0	545	0	
Shale, broken, black	3	0	548	0	
Shale, sandy	44	0	592	0	
Shale, dark	3	0	595	0	
Coal, No. 3 Pocahontas	4	0	599	0	155′ 1″
Shale, black, to bottom	5	0	604	0	

Beaver Coal Company Core Test No. 10 (144).

Slab Fork District, on Jack Branch of Slab Fork, 0.6 mile north of Slab Fork P. O.; completed, March, 1913; elevation, 2146′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sand, gravel and big boulders	12	0	12	0	
Shale	2	6	14	6	
Sand and gravel	2	0	16	6	
Shale, broken ledge	0	6	17	0	
Shale, dark, sandy partings	23	0	40	0	
Sandstone, Upper Raleigh	32	8	72	8	
Coal, Little Raleigh	0	9	73	5	73′ 5″
Shale, dark	4	0	77	5	
Shale, sandstone partings	10	0	87	5	
Sandstone	4	0	91	5	
Shale, sandstone partings	1	7	93	0	
Sandstone, shaly	15	0	108	0	
Shale, dark	52	5	160	5	
Coal	0	7	161	0	87′ 7″
Shale, dark	2	0	163	0	
Shale, dark, sandy	29	0	192	0	
Shale, dark	17	5	209	5	
Coal, bony.....0′ 1″					
Coal .....0 4 — Beckley "Rider"	0	5	209	10	
Shale, dark, coal partings	4	2	214	0	
Coal, Beckley	3	11	217	11	56′ 11″
Shale, sandy, to bottom	1	1	219	0	

Beaver Coal Company Core Test No. 8 (151).

Slab Fork District, 1.25 miles north of Slab Fork P. O.; completed, 1913; authority, Slab Fork Coal Co.; elevation, 2450′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Sand and boulders	6	0	6	0
Gravel, hard	3	0	9	0
Ledge, broken	1	0	10	0
Sandstone, hard, broken	6	0	16	0

		Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, hard		5	0	21	0	
Shale, hard sandstone bands		4	0	25	0	
Sandstone, hard broken		24	0	49	0	
Shale, black		3	0	52	0	
Shale, dark, hard bands		27	0	79	0	
Shale, dark, hard sandstone bands		54	0	133	0	
Shale, dark		66	10	199	10	
Coal, Sewell "A"		0	2	200	0	200′ 0″
Shale, gray		2	0	202	0	
Sandstone		13	9	215	9	
Shale, sandstone partings		18	0	233	9	
Shale, dark		7	0	240	9	
Shale, black		0	3	241	0	
Coal 0′ 2″ **Coal, bony** 1 10 **Coal** 1 5	**Sewell**	3	5	244	5	44′ 5″
Shale		0	7	245	0	
Sandstone, broken 47′ 0″ Sandstone 0 3	**Welch**	47	3	292	3	
Coal, Welch		0	4	292	7	48′ 2″
Shale, dark		3	6	296	1	
Sandstone		1	0	297	1	
Shale, dark		9	11	307	0	
Sandstone 2′ 0″ Shale, dark 18 0 Shale, dark, sandstone partings 7 0 Shale, sandy, sandstone partings 6 2 Sandstone 5 6 Shale, dark 0 3 Sandstone 12 1 Shale, dark 13 0 Sandstone 4 0 Shale, sandy 1 3 Shale, dark, sandstone partings 9 9 Sandstone 2 0 Shale, sandy, sandstone partings 19 0 Sandstone, hard 58 8	**Upper and Lower Raleigh**	158	8	465	8	
Shale, dark		7	1	472	9	
Coal		0	2	472	11	
Sandstone		2	0	474	11	
Shale, dark		2	8	477	7	
Sandstone		9	5	487	0	
Shale, dark		3	0	490	0	
Coal		0	8	490	8	
Shale, dark		6	4	497	0	
Sandstone		3	8	500	8	
Shale, dark		0	6	501	2	
Coal		0	2	501	4	
Shale, dark		24	5	525	9	
Coal, Beckley		3	10	529	7	237′ 0″
Shale to bottom		3	5	533	0	

Western Pocahontas Coal & Land Co. Core Test No. 1 (152).

Slab Fork District, on Left Fork of Allen Creek, 2.4 miles east of Maben; drilled for the Western Pocahontas Coal and Lumber Co. under the direction of J. C. Rawn, Chief Engineer, Pocahontas Coal & Coke Co., with Thomas H. Clagett, Assistant Engineer, in charge, who are authority for both the section and well record and for permission to publish this record, the Survey is indebted to the courtesy of George W. Stevens, President of the Chesapeake & Ohio Railway Co. The correlations and section are as published by Ray V. Hennen in the Wyoming-McDowell County Report of the State Geological Survey, pages 72-4.

Left Fork of Allen Creek Section, Slab Fork District.

Pennsylvanian (762′ 0″)	Thickness.		Total.		
New River Group (354′ 6″)	Ft.	In.	Ft.	In.	
Unrecorded from top of mountain....	10	0	10	0	
Coal, Welch.....	1	7	11	7	11′ 7″
Unrecorded	150	0	161	7	
Coal, Beckley.....	0	11	162	6	
Unrecorded and slate.....	15	3½	177	9½	
Coal and slate.0′ 4 ″					
Coal .....1 1 | Fire Creek...	3	9½	181	7	170′ 0″
Slate 0 0½					
Coal 2 4					
Fire clay and unrecorded.....	138	0	319	7	
Coal, No. 9 Pocahontas.....	1	2	320	9	139′ 2″
Unrecorded and slate.....	31	0	351	9	
Coal .....0′ 10″					
Fire clay.....1 5 | No. 8					
Coal .....0 3 | Pocahontas	2	9	354	6	33′ 9″
Slate 0 1					
Coal and slate..0 2					
Pocahontas Group (407′ 6″)					
Slate and unrecorded.....	48	0	402	6	
Coal .....0′ 10″ | No. 7					
Slate .....0 5 | Pocahontas	1	8	404	2	49′ 8″
Coal 0 3					
Coal and slate...0 2					
Unrecorded and slate.....	70	0	474	2	
Coal .....0′ 9 ″					
Slate 0 0¼					
Coal .....0 0½ | No. 6					
Slate .....0 0½ | Pocahontas	2	6	476	8	70′ 6″
Coal 1 1					
Bone 0 6					
Coal 0 1					

PLATE XIII.—Upper Pocahontas Sandstone on Piney Creek at Rodes.

	Thickness.		Total.		
Slate and unrecorded to top of Core Test No. 1—(No. 152 on Map II), at elevation of 1730' L.	Ft.	In.	Ft.	In.	
	9	4	486	0	9' 4"
Clay and gravel	5	0	491	0	
Sandstone .....,.16' 0"					
Slate 1 6					
Sandstone, broken .....14 6 } Eckman	33	0	524	0	
Slate, sandy..... 1 0					
Slate	4	5	528	5	
Coal, slaty, No. 4 Pocahontas	0	6	528	11	42' 11"
Sandstone, Upper Pocahontas	64	3	593	2	
Coal, No. 3 Pocahontas, 1619.25' L.	3	7	596	9	67' 10"
Slate, sandy	19	3	616	0	
Sandstone	4	4	620	4	
Sandstone, slaty	5	4	625	8	
Coal .....0' 8" } No. 2 "A"					
Coal, slaty.....0 2 } Pocahontas	0	10	626	6	29' 9"
Slate, sandy	6	6	633	0	
Sandstone	5	0	638	0	
Slate	1	11	639	11	
Coal, No. 2 Pocahontas	1	2	641	1	14' 7"
Slate, sandy	9	11	651	0	
Slate	1	0	652	0	
Sandstone .....19'					
Sandstone, broken..19 } Vivian	43	0	695	0	
Sandstone 5					
Slate, sandy	6	0	701	0	
Sandstone, slaty	4	0	705	0	
Slate, sandy	6	0	711	0	
Sandstone, slaty	10	0	721	0	
Slate, sandy	13	6	734	6	
Coal, Simmons?	1	0	735	6	94' 5"
Slate	6	6	742	0	
Sandstone	15	0	757	0	
Slate	1	0	758	0	
Sandstone	3	0	761	0	
Sandstone, slaty	1	0	762	0	26' 6"
Mississippian (54')					
Mauch Chunk Series (54')					
Shale, green	13	0	775	0	
Shale, red	3	0	778	0	
Shale, green and red	5	0	783	0	
Sandstone	4	0	787	0	
Shale, red and blue	13	0	800	0	
Shale, red and green	7	0	807	0	
Shale, red	8	0	815	0	
Sandstone, to bottom	1	0	816	0	54' 0"

"The above section is important in that the true position of the No. 4 Pocahontas Coal in this locality is shown to be slightly less than 65 feet above the No. 3 Pocahontas seam, instead of 120 to 130 feet above, as often assigned for this bed by local engineers. It also shows that the famous Pocahontas Coal No. 3 has a good commercial thickness (3' 7") in this region."*

*Ray V. Hennen, Wyoming-McDowell County Report, p. 74; 1915; W. Va. Geol. Survey.

The **Lynwinn Coal Company Core Test No. 1 (153)**, starting 5 feet under the Beckley Coal, mined by the Lynwinn Coal Co., on Winding Gulf at Lynwinn, is published on page 150 in the Lynwinn Section.

Piney Coking Coal Land Company Core Test No. 3 (154).

Slab Fork District, on Laurel Fork of Stonecoal Creek, 3 miles southeast from Lynwinn; completed, 1914; authority, John Bolen. Core test drilled for 85 feet and stopped. No detailed record obtained by the writer.

Piney Coking Coal Land Co. Core Test No. 2 (155).

Slab Fork District, on Stonecoal Creek, 0.9 mile northwest from Odd; completed, 1914; authority, John Bolen; elevation, 2460′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Unrecorded	56	8	56	8	
Coal, No. 7 Pocahontas	3	0	59	8	59′ 8″
Unrecorded	27	5	87	1	
Coal 0′ 7″ ⎫ **No. 6 Pocahon-**					
Slate 0 5 ⎬ **tas "Rider"**	1	11	89	0	29′ 4″
Coal 0 11 ⎭					
Unrecorded	12	7	101	7	
Coal 2′ 3″ ⎫ **No. 6**					
Bone 0 1 ⎬ **Pocahontas**	2	5	104	0	15′ 0″
Coal 0 1 ⎭					
Unrecorded to bottom	2	0	106	0	

The **Piney Coking Coal Land Co. Core Test No. 1 (156)**, on Tommy Creek, one mile west of Odd, is published on page 156 in the Section 1 Mile West of Odd P. O.

Western Pocahontas Coal & Lumber Co. Core Test No. 2 (157).

Slab Fork District, on Grave Fork of Slab Fork, 0.3 mile northwest of Hotchkiss; authority, Western Pocahontas Coal & Lumber Co.; elevation, 1728′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandy clay and boulders	12	0	12	0	
Slate, sandy	31	4	43	4	
Slate	0	11	44	3	
Coal, Fire Creek	3	8	47	11	47′ 11″
Slate, sandy	2	1	50	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	11	0	61	0	
Slate, sandy	16	0	77	0	
Sandstone, slaty	20	0	97	0	
Slate	4	3	101	3	
Coal, Little Fire Creek	1	2	102	5	54′ 6″
Slate, sandy	12	7	115	0	
Sandstone	14	0	129	0	
Slate, sandy	29	0	158	0	
Slate,	24	0	182	0	
Sandstone, slaty	32	0	214	0	
Sandstone	6	0	220	0	
Slate	5	0	225	0	
Sandstone	9	0	234	0	
Sandstone, slaty	13	0	247	0	
Slate	2	6	249	6	
Coal .....0′ 2″ ⎫ No. 6					
Bone .....0 2 ⎬ Pocahontas	2	8	252	2	149′ 9″
Coal .....2 4 ⎭					
Slate, sandy	5	10	258	0	
Sandstone, slaty	10	10	268	10	
Coal and slate...0′ 8″ ⎫					
Slate .....0 2 ⎬ No. 6 Pocahon-					
Coal .....0 10 ⎭ tas "Split"	2	1	270	11	18′ 9″
Coal, slaty.....0 5 ⎭					
Slate	3	1	274	0	
Sandstone	22	0	296	0	
Slate, sandy	4	0	300	0	
Sandstone, hard, **Eckman**	55	0	355	0	
Sandstone, **Upper Pocahontas**	32	8	387	8	
Slate	0	6	388	2	
Coal .....1′ 7″ ⎫ No. 3					
Bone .....0 1 ⎬ Pocahontas.	2	8	390	10	119′ 11″
Coal .....1 0 ⎭					
Sandstone, slaty, **Lower Pocahontas**	29	3	420	1	
Slate	5	3	425	4	
Coal, No. 2 Pocahontas	0	5	425	9	34′ 11″
Slate	2	4	428	1	
Sandstone, slaty	4	0	432	1	
Sandstone	11	0	443	1	
Slate	2	0	445	1	
Coal, No. 1 Pocahontas	1	7	446	8	20′ 11″
Slate	2	4	449	0	
Sandstone	53	0	502	0	
Sandstone, slaty, to bottom	6	0	508	0	61′ 4″

The foregoing section starts 17 feet below 1′ 8″ of coal which may be a "split" from the Beckley bed.

Shady Spring District.

A few core test holes have been sunk in Shady Spring District, to test the lower coals.

The **New River Company Core Test No. 1 (158),** in Shady Spring District, on Bowyer Creek of Piney Creek, one mile from its mouth, near Bowyer schoolhouse, 2.6 miles southeast of Woodpeck, is published on page 162 in the Section 3 Miles Southeast of Abney P. O.

New River Company Core Test No. 2 (159).

Shady Spring District, on Bowyer Creek of Piney Creek, 1.6 miles from its mouth and 3.25 miles from Woodpeck; completed, 1910; authority, Jack Anderson; elevation, 2470′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sand, gravel and boulders	30	0	30	0	
Mud, blue	3	0	33	0	
Sandstone, gray... 25′ / Slate, blue ..... 9 / Sandstone 35	69	0	102	0	
Coal, No. 7 Pocahontas	0	4	102	4	102′ 4″
Slate	18	0	120	4	
Coal	1	3	121	7	
Fire clay	1	6	123	1	
Sandstone	4	0	127	1	
Slate, black	16	0	143	1	
Coal, No. 6 Pocahontas	2	6	145	7	43′ 3″
Fire clay	3	0	148	7	
Sandstone to bottom	4	0	152	7	

Beaver Coal Company Core Test No. 7 (161).

Shady Spring District, on east side of Piney Creek, 0.5 mile northeast of Pemberton; completed, November, 1908; authority, T. M. Mordeau; elevation, 2265′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	13	0	13	0	
Sandstone	7	0	20	0	
Shale, sandy	12	8	32	8	
Sandstone, **Lower Raleigh**	58	8	91	4	
Shale, blue	1	11	93	3	
Coal, sandstone partings, **Beckley**	11	9	105	0	105′ 0″
Shale, blue	32	5	137	5	
Coal	0	4	137	9	
Fire clay	3	0	140	9	
Shale, blue	8	11	149	8	
Coal, Fire Creek	1	4	151	0	46′ 0″

	Thickness. Ft.	In.	Total. Ft.	In.	
Fire clay	2	5	153	5	
Shale, sandy	35	7	189	0	
Shale, blue	4	7	193	7	
Sandstone	1	0	194	7	
Shale, blue	2	2	196	9	
Sandstone	21	6	218	3	
Slate, sandy	12	2	230	5	
Coal, Little Fire Creek	1	10	232	3	81' 3"
Fire clay	1	4	233	7	
Sandstone	30	5	264	0	
Shale, sandy	17	6	281	6	
Slate, **No. 8 Pocahontas Coal horizon**	5	0	286	6	54' 3"
Sandstone, **Flattop Mountain**, very hard	63	6	350	0	
Sandstone, shale partings	23	2	373	2	
Sandstone, very hard, **Eckman**	29	5	402	7	
Shale, sandy	4	2	406	9	
Sandstone, shale partings	11	11	418	8	
Shale, blue	41	2	459	10	
Sandstone, very hard, **Upper Pocahontas**	48	2	508	0	
Sandstone, soft	12	2	520	2	
Coal 0' 11" / Fire clay 0 5 / **Coal** 3 7 — **No. 3 Pocahontas**	4	11	525	1	238' 7"
Fire clay to bottom	0	11	526	0	

C. P. Phillips Core Test No. 1 (162).

Shady Spring District, on east side of Beaver Creek, near Phillips School House; 3.5 miles south from Blue Jay; completed, October 6, 1906; authority, W. H. Warner.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	3	6	3	6	
Sandstone, hard	41	0	44	6	
Shale, dark	10	0	54	6	
Slate, dark	11	0	65	6	
Sandstone, hard, **Flattop Mountain**	77	6	143	0	
Shale, dark	4	0	147	0	
Coal, No. 7 Pocahontas	1	0	148	0	148' 0"
Slate, dark, shaly	74	0	222	0	
Sandstone, hard, partly conglomerate, **Upper Pocahontas**	73	0	295	0	
Shale, gray, sandy	9	0	304	0	
Coal 0' 1" / Slate and soapstone 1 6 / **Coal** 0 2 / Shale, dark, mixed soapstone 2 3 / **Coal** 3 0 — **No. 3 Pocahontas**	7	0	311	0	163' 0"
Shale, sandy	4	0	315	0	

		Thickness. Ft.	In.	Total. Ft.	In.	
Shale, mixed soapstone		2	0	317	0	
Sandstone		3	5	320	5	
Shale, mixed soapstone		1	2	321	7	
Coal ....0′ 1″ Shale, dark, **mixed soap-** stone ....1 6 **Coal** ....0 2 Shale ....0 8 **Coal** 0 9	**No. 2 "A" Pocahontas**	3	2	324	9	13′ 9″
Shale, mixed soapstone		2	0	326	9	
Shale, gray, sandy		14	0	340	9	
Sandstone, hard.14′ 3″ Shale, dark .... 4 0 Sandstone, hard.37 0 Sandstone 35 0	**Lower Pocahontas**	90	3	431	0	
Shale, dark		8	0	439	0	
Coal, No. 1 Pocahontas		0	2	439	2	114′ 5″
Shale, dark, mixed soapstone		15	10	455	0	
Shale, dark, mixed fire clay with iron boulders		7	0	462	0	
Shale, dark		5	0	467	0	
Shale, mixed soapstone		0	6	467	6	
Coal, Simmons		0	6	468	0	28′ 10″
Shale, dark gray, mixed coal and fire clay and soapstone		4	0	472	0	
Shale, gray, sandy		4	0	476	0	
Slate, gray, shaly		2	0	478	0	
Shale, green		1	0	479	0	
Shale, blue, sandy, to bottom		21	0	500	0	

The **Henry Massey Core Test No. 1 (163)**, in Shady Spring District, on Left Fork of Beaver Creek, ½ mile southwest of Shady Spring P. O., is published on page 164 in the Section ½ Mile Southwest of Shady Spring P. O.

The **New River Coal Co. Core Test No. 1 (165)**, in Shady Spring District, 0.8 mile north of Grandview, published on pages 21-3 of Volume II(A) of Survey Reports, is republished on page 70, in the Grandview Section.

Beaver Coal Company Core Test No. 1 (138).

Slab Fork District, on Right Fork of Richardson Branch of Burnt Fork of Slab Fork, 0.7 mile west of Jenny Gap Station; completed, 1915; authority, E. S. Simpson, President, West Virginia Coal Company; elevation, 2110′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	2	7	2	7	
Shale, dark	40	9	43	4	
Coal, Sewell "A"	0	8	44	0	44′ 0′
Fire clay	2	9	46	9	
Shale with sandstone partings	14	1	60	10	
Coal 0′ 4″ / Slate 6 2 / **Coal, bony** 0 7 / Slate 0 4 / **Coal, bony** 1 9 — Sewell	9	2	70	0	26′ 0″
Slate	5	2	75	2	
Sandstone, very hard	4	2	79	4	
Shale, sandstone partings	6	4	85	8	
Sandstone, very hard	33	0	118	8	
Shale, black, **Welch Coal horizon**	6	10	125	6	55′ 6″
Sandstone, very hard	47	2	172	8	
Shale with sandstone partings	1	0	173	8	
Shale, blue	2	0	175	8	
Sandstone, very hard	4	0	179	8	
Shale, sandstone partings	2	0	181	8	
Sandstone, very hard	3	0	184	8	
Shale, sandstone partings	5	4	190	0	
Sandstone, very hard	6	0	196	0	
Sandstone, shale partings	8	0	204	0	
Sandstone, very hard	9	2	213	2	
Shale, sandstone partings	7	0	220	2	
Sandstone, very hard	37	0	257	2	
Slate, **Little Raleigh Coal horizon**	6	3	263	5	137′ 11″
Shale, blue	5	0	268	5	
Shale, sandstone partings	3	0	271	5	
Shale, blue	16	1	287	6	
Slate	0	7	288	1	
Sandstone, fine 16′ / Sandstone, shale partings 26 / Sandstone, coarse, gray 55 — Lower Raleigh	97	0	385	1	
Shale, sandstone partings, **Quinnimont**	5	0	390	1	
Shale, blue	13	2	403	3	
Slate	1	0	404	3	
Coal, Fire Creek	3	5	407	8	144′ 3″
Fire clay to bottom	1	4	409	0	

The **Beckley Coal** appears to be entirely absent at this point, and the Raleigh Sandstone is broken up into sandstone and shale.

New River Collieries Company Core Test No. 2 (166).

Shady Spring District, at Grandview; authority, New River Collieries Company; elevation, 2509′ L.; published in Volume II(A), pages 24-5, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	2	3	2	3	
Sandstone, Upper Raleigh	60	0	62	3	
Coal, Little Raleigh	0	4	62	7	62′ 7″
Fire clay	6	6	69	1	
Slate and fire clay	1	3	70	4	
Sandstone .....17′ 11″					
Slate, sandy..... 2 10					
Sandstone .....51 11 — Lower					
Slate, sandy.... 2 9 — Raleigh ..	94	0	164	4	
Sandstone 17 7					
Slate 1 0					
Coal, Beckley	0	10	165	2	102′ 7″
Fire clay and bastard limestone	5	9	170	11	
Slate, sandy	12	7	183	6	
Sandstone and sandy slate	12	0	195	6	
Slate	1	0	196	6	
Green shale, sandy	5	3	201	9	
Sandstone	11	9	213	6	
Green shale and sandy slate	11	8	225	2	
Sandstone and sandy slate	18	5	243	7	
Sandy slate and sandstone	23	7	267	2	
Sandy slate	1	8	268	10	
Slate	10	11	279	9	
Coal, Fire Creek	2	4	282	1	116′ 11″
Fire clay	8	5	290	6	
Sandstone	30	9	321	3	
Coal, Little Fire Creek	0	6	321	9	39′ 8″
Slate and sandstone	9	4	331	1	
Sandstone and slate to bottom	11	2	342	3	

Huling et al. Core Test No. 1 (172).

Shady Spring District, on east side of Glade Creek, 1.25 miles southeast of Glade Station; authority, J. T. Lightner; elevation 2760′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay, yellow	4	0	4	0	
Sandstone	51	0	55	0	
Slate	3	0	58	0	
Sandstone	4	0	62	0	
Slate	3	0	65	0	
Sandstone	2	6	67	6	
Slate	5	0	72	6	
Coal, Beckley	1	1	73	7	73′ 7″
Sandstone, coal partings	6	5	80	0	
Slate, sandy	25	0	105	0	
Slate, dark	25	0	130	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	3	2	133	2	
Coal	0	1	133	3	59′ 8″
Sandstone	8	9	142	0	
Shale	0	6	142	6	
Sandstone	4	6	147	0	
Slate, sandstone seams	3	0	150	0	
Slate, sandy, and sandstone partings	18	0	168	0	
Sandstone, hard bands	9	0	177	0	
Sandstone	2	0	179	0	
Coal, Fire Creek	0	10	179	10	46′ 7″
Slate	18	2	198	0	
Sandstone	20	0	218	0	
Sandstone, coal partings	19	0	237	0	
Slate, dark	20	2	257	2	
Coal, No. 8 Pocahontas	1	0	258	2	78′ 4″
Slate, black	0	4	258	6	
Slate, sandy, with sandstone bands	26	6	285	0	
Slate, light	5	0	290	0	
Slate, dark, mixed with coal	1	0	291	0	
Fire clay	0	9	291	9	
Coal 0′ 1″					
Slate 0 2					
Slate, black 0 5					
Coal 1 2					
Slate, black 0 10	**No. 7**				
Coal 1 8	**Pocahontas**	7	0	298	9	40′ 7″
Slate, black 1 0					
Coal 0 2					
Slate, black 1 0					
Coal 0 6					
Sandstone to bottom	3	3	302	0	

Huling et al. Core Test No. 2 (173).

Shady Spring District, on Redden Ridge, 0.4 mile south of Plumley Knob, and 2 miles southeast of Glade Station; authority, J. T. Lightner; elevation, 2830′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay, yellow	15	0	15	0	
Sandstone, shale partings	8	0	23	0	
Sandstone	10	0	33	0	
Sandstone, coal partings	9	0	42	0	
Sandstone, hard	36	0	78	0	
Slate, coal partings	1	0	79	0	
Slate, sandy	5	0	84	0	
Sandstone, slate parting	18	0	102	0	
Sandstone	63	0	165	0	
Slate, sandy	1	8	166	8	
Coal, Beckley?	0	4	167	0	167′ 0″
Sandstone, dark	10	0	177	0	
Sandstone, hard, white	2	0	179	0	
Slate, dark	4	0	183	0	
Slate, black	1	0	184	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate, gray	10	0	194	0	
Slate, black, hard partings	1	0	195	0	
Slate	3	0	198	0	
Slate, black	1	5	199	5	
Coal, Fire Creek?	4	3	203	8	36′ 8″
Slate, dark	5	4	209	0	
Slate, light, sandy	16	0	225	0	
Slate, sandy	2	0	227	0	
Sandstone	35	0	262	0	
Slate, dark	2	0	264	0	
Coal, Little Fire Creek	0	3	264	3	60′ 7″
Fire clay	1	9	266	0	
Slate	4	0	270	0	
Slate, black	1	0	271	0	
Sandstone	7	0	278	0	
Slate, light, dark bands	10	0	288	0	
Slate, black	2	3	290	3	
Coal 1′ 8″ / Slate, black 2 8 / **Coal** 0 3 — **No. 8 Pocahontas**	4	7	294	10	30′ 7″
Slate, dark, to bottom	4	2	299	0	

Huling et al. Core Test No. 3 (174).

Shady Spring District, on Redden Ridge, 0.3 mile northwest of Pear; authority, J. T. Lightner; elevation, 2805′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay, yellow	6	0	6	0	
Shale, blue	10	0	16	0	
Sandstone	29	0	45	0	
Slate, blue	4	0	49	0	
Sandstone	24	10	73	10	
Slate, gray	0	2	74	0	
Sandstone, dark	11	6	85	6	
Slate, gray	11	4	96	10	
Coal, Fire Creek	0	4	97	2	97′ 2″
Slate	2	10	100	0	
Sandstone	1	0	101	0	
Slate, gray	1	0	102	0	
Sandstone	10	0	112	0	
Slate	14	0	126	0	
Slate, gray	15	4	141	4	
Slate, black	0	10	142	2	
Slate, gray	11	10	154	0	
Slate, black	3	0	157	0	
Slate, sandy	1	0	158	0	
Slate, sandy, hard bands	9	6	167	6	
Sandstone, hard	4	0	171	6	
Slate, gray, sandy	3	6	175	0	
Sandstone	10	0	185	0	
Slate, gray	2	0	187	0	
Sandstone, hard	8	6	195	6	

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate	0	3	195	9	
Sandstone	0	6	196	3	
Coal, No. 8 Pocahontas	2	2	198	5	101′ 3″
Sandstone to bottom	3	7	202	0	

Huling et al. Core Test No. 4 (175).

Shady Spring District, on north of Redden Ridge, 1.5 miles southeast of Glade Station; authority, J. T. Lightner; elevation, 2755′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Soil	3	0	3	0	
Sandstone, hard	50	0	53	0	
Coal, Beckley	1	0	54	0	54′ 0″
Slate, brown	3	0	57	0	
Slate, blue, coal partings	5	6	62	6	
Slate, blue, hard bands	18	0	80	6	
Slate, black	2	6	83	0	
Slate, gray	7	0	90	0	
Sandstone	21	0	111	0	
Sandstone, occasional coal partings	35	6	146	6	
Slate, blue	0	6	147	0	
Slate, dark	2	7	149	7	
Coal, Fire Creek	5	0	154	7	100′ 7″
Fire clay to bottom	1	5	156	0	

Huling et al. Core Test No. 5 (176).

Shady Spring District, on Smith Mountain, one mile east of Pear; authority, J. T. Lightner; elevation, 2810′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay, yellow	5	6	5	6	
Sandstone	34	9	40	3	
Coal, No. 9 Pocahontas	0	3	40	6	40′ 6″
Slate, gray, hard bands	30	3	70	9	
Coal, No. 8 Pocahontas, slate partings	0	9	71	6	31′ 0″
Slate	2	0	73	6	
Slate, coal partings	1	6	75	0	
Slate, sandy	11	0	86	0	
Slate, gray, hard bands	6	6	92	6	
Slate, black	2	6	95	0	
Slate, sandy	6	9	101	9	
Sandstone	5	9	107	6	
Slate, sandy	1	5	108	11	
Sandstone	1	10	110	9	
Slate, sandy	11	3	122	0	
Slate, gray	15	0	137	0	
Slate, black	2	9	139	9	
Coal, No. 7 Pocahontas	0	7	140	4	68′ 10″
Slate, sandy	7	8	148	0	
Slate, sandy, coal partings	2	0	150	0	
Sandstone	7	6	157	6	
Slate, sandy	1	6	159	0	

		Thickness. Ft.	In.	Total. Ft	In.	
Slate, dark, mixed with coal		0	6	159	6	
Slate, gray, sandy		7	10	167	4	
Slate, dark, mixed with coal		3	0	170	4	
Slate, gray, sandy		5	8	176	0	
Slate, sandy		7	9	183	9	
Slate, black, coal seams		0	4	184	1	
Coal 0′ 4″ / Slate, gray, hard bands 5 7 / Coal 0 3	No. 6 Pocahontas	6	2	190	3	49′ 11″
Slate, sandy		13	3	203	6	
Sandstone, hard bands		5	6	209	0	
Slate, sandy		1	0	210	0	
Slate, dark		3	0	213	0	
Slate, gray, to bottom		2	0	215	0	

Huling et al. Core Test No. 6 (177).

Shady Spring District, 1.35 miles southeast of Glade Station; authority, J. T. Lightner; elevation, 2800′ B.

		Thickness. Ft.	In.	Total. Ft.	In.	
Clay		5	0	5	0	
Sandstone, shale partings		4	0	9	0	
Sandstone		40	4	49	4	
Coal, Little Raleigh		0	3	49	7	49′ 7″
Slate, sandy		13	2	62	9	
Coal, Little Raleigh		0	4	63	1	13′ 6″
Slate, sandy		9	11	73	0	
Sandstone		2	0	75	0	
Slate, sandy, sandstone bands		17	0	92	0	
Slate, sandy		8	0	100	0	
Sandstone		35	0	135	0	
Sandstone, conglomerate		2	0	137	0	
Sandstone		7	0	144	0	
Slate, black		1	0	145	0	
Coal 0′ 2″ / Slate, black 3 10 / Coal 0 3	Beckley "A"	4	3	149	3	86′ 2″
Slate		11	0	160	3	
Coal 0′ 1″ / Slate 0 2 / Coal 0 6	Beckley	0	9	161	0	11′ 9″
Slate		4	0	165	0	
Slate, sandy		31	0	196	0	
Slate, black		1	0	197	0	
Coal, small slate parting, **Fire Creek**		2	7	199	7	28′ 7″
Slate, sandy, to bottom		1	5	201	0	

Huling et al. Core Test No. 7 (178).

Shady Spring District, on Redden Ridge, ½ mile northwest of Pear; authority, J. T. Lightner; elevation, 2795′ B.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay, yellow	15	0	15	0	
Shale, sandy	6	0	21	0	
Sandstone, hard	67	3	88	3	
Coal, Fire Creek	0	7	88	10	88′ 10″
Shale	1	9	90	7	
Shale, sandy	18	5	109	0	
Shale, black	1	0	110	0	
Shale, gray	2	0	112	0	
Shale, sandy	24	0	136	0	
Shale, gray	12	4	148	4	
Shale, black	2	0	150	4	
Coal and black slate mixed, **No. 9 Pocahontas**	1	0	151	4	62′ 6″
Slate, black	2	2	153	6	
Slate, sandy	3	6	157	0	
Sandstone	13	0	170	0	
Slate, blue	2	0	172	0	
Slate with bands of sandstone	14	0	186	0	
Slate, sandy	11	0	197	0	
Slate, brown, hard bands	21	0	218	0	
Sandstone, dark	34	6	252	6	
Slate, dark, hard bands	2	6	255	0	
Sandstone	2	0	257	0	
Slate, hard bands	3	0	260	0	
Coal, No. 6 Pocahontas	0	2	260	2	108′ 10″
Slate, dark, hard bands	8	10	269	0	
Slate, gray	8	0	277	0	
Slate, black	1	3	278	3	
Coal, No. 6 Pocahontas	1	1	279	4	19′ 2″
Fire clay	0	8	280	0	
Slate, sandy, to bottom	3	0	283	0	

McKinley Land Co. Core Test No. 12 (182).

Town District, on Lefthand Fork of Paint Creek, 0.5 mile from its mouth and 0.5 mile east of Sweeneyburg; completed, June, 1905; authority, J. B. Laing; elevation, 1855.0′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface, stand-pipe	8	6	8	6	
Sandstone, gray	0	4	8	10	
Slate and sandstone	4	8	13	6	
Sandstone, gray	9	3	22	9	
Slate	150	10	173	7	
Sandstone, gray	1	3	174	10	
Slate	23	8	198	6	
Coal 1′ 7″ Slate 0 9 } Sewell **Coal** 0 11	3	3	201	9	201′ 9″

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate	61	4	263	1	
Sandstone, gray, **Raleigh**	211	3	474	4	
Slate	102	2	576	6	
Sandstone	10	4	586	10	
Coal, No. 9 Pocahontas	1	3	588	1	386′ 4″
Slate	6	4	594	5	
Sandstone, gray	2	9	597	2	
Slate	24	7	621	9	
Sandstone, gray	57	7½	679	4½	
Coal, No. 6 Pocahontas	0	4½	679	9	91′ 8″
Slate	18	9	698	6	
Slate with seams of coal	0	7¼	699	1¼	
Coal 1′ 1¾″					
Slate 2 8¼ | **No. 4**					
Coal 0 4 } **Pocahontas**	5	6¾	704	8	24′ 11″
Slate 1 0 |					
Coal 0 4¾]					
Slate	21	2	725	10	
Sandstone	1	0	726	10	
Slate	14	9	741	7	
Coal 1′ 7″ } **No. 3**					
Coal wash 2 1] **Pocahontas**	3	8	745	3	40′ 7″
Slate	24	9	770	0	
Sandstone	2	0	772	0	
Slate	10	4	782	4	
Sandstone, gray, to bottom	17	9	800	1	

Enoch Smith Core Test No. B-19 (183).

Town District, on Maple Fork, 0.6 mile southwest of Nesco; authority, J. S. Cunningham; completed, June 7, 1912; elevation, 2073.33′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	10	0	10	0
Sandstone, hard	30	0	40	0
Shale, dark	0	6	40	6
Sandstone	22	0	62	6
Coal, bony	0	1	62	7
Sandstone	2	0	64	7
Shale, dark	2	7	67	2
Sandstone	1	0	68	2
Sandstone, dark	4	2	72	4
Sandstone	43	4	115	8
Shale, dark, sandy	1	0	116	8
Sandstone	1	9	118	5
Shale, variegated	3	6	121	11
Slate, black	41	3	163	2
Shale, dark, sandy	3	2	166	4
Coal, bony	0	2	166	6
Sandstone	35	11	202	5
Slate, black	1	3	203	8
Sandstone	3	3	206	11

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate, black	11	0	217	11	
Sandstone	16	9	234	8	
Sandstone, hard	85	5	320	1	
Slate, black	0	11	321	0	
Shale, dark, sandy	2	3	323	3	
Slate, black	15	6	338	9	
Shale, sandy	5	0	343	9	
Slate, black	2	0	345	9	
Shale, light	2	9	348	6	
Slate, black	78	10	427	4	
Coal, Sewell "A"	0	6	427	10	427' 10"
Slate, black	1	0	428	10	
Sandstone	19	1	447	11	
Slate, black	6	10	454	9	
Sandstone	1	8	456	5	
Shale, sandy	23	10	480	3	
Slate, black	0	3	480	6	
Shale, dark, sandy	5	11	486	5	
Shale, dark	2	0	488	5	
Coal, Sewell	2	0	490	5	62' 7"
Fire clay, hard	6	7	497	0	
Shale, dark	14	9	511	9	
Coal, Welch	0	8	512	5	22' 0"
Bone	0	10	513	3	
Fire clay, black	0	5	513	8	
Shale, dark, sandy	11	0	524	8	
Shale, dark	34	10	559	6	
Coal, Little Raleigh	0	2	559	8	47' 3"
Sandstone, hard	82	10	642	6	
Coal	0	8	643	2	
Fire clay	5	10	649	0	
Shale, dark, sandy	4	10	653	10	
Slate, black	2	9	656	7	
Coal	0	3	656	10	
Fire clay	4	6	661	4	
Shale, dark	7	3	668	7	
Coal	0	10	669	5	
Fire clay	2	7	672	0	
Shale, dark	6	4	678	4	
Sandstone	9	0	687	4	
Shale, dark, sandy	6	1	693	5	
Slate, black	4	1	697	6	
Coal, Beckley "Rider"	1	2	698	8	139' 0"
Bone	2	0	700	8	
Slate, black	8	11	709	7	
Coal, Beckley	4	9	714	4	15' 8"
Slate and coal streaks	1	2	715	6	
Slate and fire clay	1	7	717	1	
Shale, dark, sandy	0	7	717	8	
Sandstone to bottom	5	9	723	5	

The foregoing section shows the Sewell Coal to be thin while the Beckley is 4 feet 9 inches.

E. J. Berwind Core Test No. B-29 (184).

Town District, on east side of Paint Creek, at Sweeneyburg; completed, Oct. 15, 1913; authority, J. S. Cunningham; elevation, 2073.33′ L.

	Thickness.		Total.		
	Ft.	In.	Ft.	In.	
Surface	20	0	20	0	
Shale, dark	106	0	126	0	
Sandstone	24	0	150	0	
Shale, light	2	0	152	0	
Sandstone	6	0	158	0	
Shale, dark	16	6	174	6	
Coal 1′ 2″ / Slate, binder 1 5 / Coal 4 0 — Sewell	6	7	181	1	181′ 1″
Fire clay, slaty	0	8	181	9	
Shale, dark	4	7	186	4	
Sandstone	5	6	191	10	
Shale, dark	11	0	202	10	
Sandstone, Welch	47	2	250	0	
Shale, light	7	0	257	0	
Sandstone, hard	2	0	259	0	
Shale, light	12	0	271	0	
Sandstone, Upper Raleigh, very hard	65	0	336	0	
Shale, dark	20	0	356	0	
Sandstone, Lower Raleigh	61	0	417	0	
Coal, bony 0′ 8″ / Coal, lost 3 4 / Slate and coal streaks 1 3 / Coal, bony 2 0 — Beckley	7	3	424	3	243′ 2″
Fire clay, shaly, to bottom	3	3	427	6	

Beaver Coal Company Core Test No. 4 (185).

Town District, at Glen White; completed, May 4, 1908; authority, E. E. White; elevation, 2169.9′ L.

	Thickness.		Total.		
	Ft.	In.	Ft.	In.	
Surface	27	6	27	6	
Sandstone	3	0	30	6	
Shale, blue, sandy	29	6	60	0	
Slate, black	1	0	61	0	
Sandstone, hard	8	0	69	0	
Shale, sandy	4	0	73	0	
Sandstone, hard	25	0	98	0	
Shale, dark, sandy	61	0	159	0	
Shale, dark	0	6	159	6	
Slate, black, and coal	0	9	160	3	
Shale, light, sandy	20	0	180	3	
Shale, dark	1	9	182	0	
Coal 0′ 2″ / Light shale 1 0 / Coal 0 6 / Dark shale 1 4 / Coal 0 4 — Little Raleigh	3	4	185	4	185′ 4″

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, light, sandy	15	0	200	4	
Slate, black, coal partings	1	6	201	10	
Shale, light, sandy	11	7	213	5	
Sandstone	0	5	213	10	
Shale	1	4	215	2	
Sandstone, soft, **Lower Raleigh**	28	8	243	10	
Shale, blue	13	0	256	10	
Slate, black	0	4	257	2	
Coal 5′ 8″ ⎫ **Beckley and**					
Bone 0 4 ⎬ **Fire Creek**	10	2	267	4	82′ 0″
Coal 4 2 ⎭					
Shale, black	0	2	267	6	
Sandstone, soft, to bottom	1	4	268	10	

DIAMOND CORE TESTS IN FAYETTE COUNTY.

In addition to the core tests already published on preceding pages of this Report, there are a number of core tests just north of the Raleigh-Fayette County Line that give important data on the depth, thickness and purity of the coals. A few of these will now be given.

The **Gallego Land Co. Core Test No. 1 (189),** located on Paint Creek at Keeferton, is published in the Section 1 mile north of Kingston P. O., page 56 of this Report.

The **Plum Orchard Coal & Land Co. Core Test No. 3 (190),** in Fayetteville District, Fayette County, on Willis Branch, on **Burges farm,** 1.5 miles northwest of Herberton, published in Volume II(A), page 43-4, of Survey Reports, is republished on page 120 in the Section 1.1 Miles Northwest of Herberton.

Plum Orchard Coal & Land Co. Core Test No. 2 (192).

Fayetteville District, Fayette County, on Horse Creek, 2.8 miles northeast of Herberton, on **Deal Farm;** authority, Plum Orchard Coal & Land Co.; published in Volume II(A), pages 42-3, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Soil and boulders	10	0	10	0	
Sandstone, dark	2	1¾	12	1¾	
Coal, laeger	0	9	12	10¾	12′ 10¾″
Sandstone, dark	15	3¼	28	2	
Sandstone	18	10	47	0	
Sandstone and shale	27	2	74	2	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	15	1	89	3	
Sandstone, **Harvey Conglomerate**	64	0	153	3	
Sandstone and shale	19	9	173	0	
Shale	4	6	177	6	
Sandstone and shale	18	6	196	0	
Sandstone	30	7	226	7	
Shale	2	3	228	10	
Coal, Sewell "A"	1	3	230	1	217′ 2¼″
Shale, sandy	6	6	236	7	
Sandstone and shale	13	6	250	1	
Shale, dark	36	11	287	0	
Coal, Sewell, impure	2	5	289	5	59′ 4″
Shale, soft	16	9½	306	2½	
Coal, Sewell "Split"	0	4½	306	7	
Shale	2	5	309	0	
Sandstone	18	0	327	0	
Sandstone and shale	31	8	358	8	
Shale, sandy	1	4	360	0	
Sandstone, hard 60′ 0″ / Sandstone, conglomerate 17 11 — **Upper Raleigh**	77	11	437	11	
Sandstone and shale	6	5	444	4	
Shale, sandy	14	1	458	5	
Coal, Little Raleigh	0	6	458	11	169′ 6″
Shale, dark	10	10	469	9	
Sandstone and shale	7	3	477	0	
Sandstone, hard 129′ 2″ / Sandstone, conglomerate 10 6 / Sandstone, hard 10 4 — **Lower Raleigh**	150	0	627	0	
Sandstone, shale	5	3	632	3	
Shale	17	3	649	6	
Coal, Fire Creek	0	4	649	10	190′ 11″
Shale	31	2	681	0	
Sandstone and shale	23	10	704	10	
Coal, No. 9 Pocahontas, trace					
Shale	12	1	716	11	
Sandstone	4	6	721	5	
Sandstone and shale	15	10	737	3	
Sandstone	48	1	785	4	
Sandstone and shale	8	8	794	0	
Shale, dark (2″ coal)	3	0	797	0	
Sandstone	6	7	803	7	
Sandstone, dark	3	3	806	10	
Shale, dark	15	4	822	2	
Shale, white, sandy, base of Pottsville	16	4	838	6	
Red and green shale (Mauch Chunk)	82	9	921	3	
Sandstone	33	1	954	4	

Plum Orchard Coal & Land Co. Core Test No. 1 (193).

Fayetteville District, Fayette County, on **Pinter Farm**, on waters of Plum Orchard, 0.7 mile northeast of Lively Station; authority, Plum Orchard Coal & Land Co.; published in Volume II(A), page 41, of Survey Reports.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, **Nuttall**	83	0	83	0	
Shale, sandy	26	0	109	0	
Shale, dark	5	0	114	0	
Coal, Iaeger	1	0	115	0	115′ 0″
Sandstone and shale	58	0	173	0	
Sandstone, hard, **Harvey Conglomerate**	42	0	215	0	
Sandstone and shale	38	0	253	0	
Shale, dark, coal at base	14	0	267	0	
Sandstone, hard, **Guyandot**	65	0	332	0	
Sandstone and shale	30	0	362	0	
Coal, Sewell	3	2	365	2	250′ 2″
Shale, gray	7	10	373	0	
Sandstone, hard	30	0	453	0	
Sandstone and shale	56	0	509	0	
Sandstone in layers of from 14′ to 30″; bottom of ledges composed of shale, sulphur and sand conglomerate	86	6	595	6	
Sandstone, hard	47	6	643	0	
Sandstone, hard, sulphur	27	0	670	0	
Sandstone, hard	84	0	754	0	
Sandstone, conglomerate	8	0	762	0	
Sandstone, showing of coal	10	0	772	0	
Sandstone	35	0	807	0	
Shale, dark	2	0	809	0	
Sandstone	9	0	818	0	
Shale, dark	10	0	828	0	
Sandstone	13	0	841	0	
Shale	3	0	844	0	
Sandstone and shale	12	0	856	0	
Sandstone	10	0	866	0	
Shale, dark	6	0	872	0	
Sandstone	2	0	874	0	
Shale, dark	8	0	882	0	
Sandstone, hard, base of Pottsville	3	0	885	0	
Shale, red and green	10	0	895	0	
Sandstone and shale	105	0	1000	0	
Sandstone and shale	17	8	1017	8	
Sandstone, hard	26	4	1044	0	
Sandstone, light and dark	8	0	1052	0	
Sandstone, dark	67	0	1119	0	
Sandstone and shale	11	0	1130	0	
Shale, dark	75	0	1205	0	
Sandstone to bottom	10	0	1215	0	

McKinley Land Company Core Test No. 2 (194).

Fayetteville District, Fayette County, on Boyd Branch, on **O'Neil Farm**, 0.6 mile southeast from Herberton; completed, 1907; authority, J. B. Laing; elevation, 1732.52′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	8	0	8	0	
Sandstone, very hard	29	6	37	6	
Sandstone, shale partings	11	3	48	9	
Shale, sandstone partings	3	4	52	1	
Sandstone, very hard	90	0	142	1	
Shale, blue	7	0	149	1	
Sandstone, shale partings	10	0	159	1	
Shale, sandstone partings	43	0	202	1	
Shale, dark	17	0	219	1	
Coal, Sewell "B"	0	8	219	9	219′ 9″
Fire clay	0	1	219	10	
Sandstone, very hard	19	10	239	8	
Shale, dark	37	0	276	8	
Slate, black	5	0	281	8	
Bone 0′ 2″ } **Sewell**	4	3	285	11	66′ 2″
Coal 4 1 }					
Shale, blue	20	3	306	2	
Bone	3	8	309	10	
Shale, dark	1	4	311	2	
Sandstone, very hard, to bottom	5	10	317	0	

The E. J. Berwind Core Test B-25 (197), in Fayetteville District, Fayette County; on Paint Creek, on the **Francis Humphrey tract**, at Weirwood, is published on page 66 in the Herberton Section.

E. J. Berwind Weirwood Shaft (198).

Fayetteville District, Fayette County, at Weirwood; depth to bottom of Sewell Coal, 315′ 8″; thickness of Sewell Coal, 3′ 10″.

E. J. Berwind Core Test B-3 (199)

Fayetteville District, Fayette County; on Knob Branch, one mile east of Herberton, and 0.5 mile north of the Fayette-Raleigh County Line; authority, J. S. Cunningham; elevation, 1872.70′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Sand and gravel	30	0	30	0
Sandstone	34	0	64	0
Shale with sandstone partings	39	2	103	2
Slate	0	4	103	6

	Thickness. Ft.	In.	Total. Ft.	In.	
Coal, laeger	0	6	104	0	104' 0"
Fire clay	0	2	104	2	
Shale, black	7	10	112	0	
Shale, with sandstone parting	4	2	116	2	
Sandstone	32	2	148	4	
Slate	2	4	150	8	
Shale, black	2	1	152	9	
Slate	0	8	153	5	
Coal	0	5	153	10	
Shale	1	0	154	10	
Sandstone, hard	55	2	210	0	
Sandstone, harder	38	0	248	0	
Shale, dark	34	0	282	0	
Coal and bone, **Sewell "B"**	0	4	282	4	178' 4"
Fire clay	7	6	289	10	
Sandstone	13	0	302	10	
Shale, dark, sandy	19	0	321	10	
Slate, black	34	8	356	6	
Bone ..... 0' 6" } **Sewell "A"**	1	6	358	0	75' 8"
Coal ..... 1 0 }					
Sandstone	4	6	362	6	
Fire clay	6	5	368	11	
Slate, black	13	9	382	8	
Slate, black, with coal spars	1	11	384	7	
Coal, Sewell	4	2	388	9	30' 9"
Fire clay to bottom	2	5	391	2	

The foregoing core test shows the Sewell seam of its usual thickness and purity at this point.

The New River Company encountered a "roll" in its Sherwood Mine, on lands of Davis, Fudge, et al. In order to test the extent of this impure coal, some core tests were drilled in advance of the mine workings. The following three records give the results of these borings:

Davis, Fudge et al. Core Test No. 1 (200).

Fayetteville District, Fayette County, on waters of Packs Branch, 2.6 miles west of Mt. Hope, and 0.5 mile north of the Fayette-Raleigh County Line; authority, New River Company; elevation, 1995.45' L.

	Thickness. Ft.	In.	Total. Ft.	In.
Sand and gravel	9	0	9	0
Sandstone, light	37	0	46	0
Slate, dark	21	0	67	0
Slate, light	4	0	71	0
Sandstone	20	0	91	0
Slate, dark	3	0	94	0
Sandstone	28	0	122	0
Shale, sandy	9	0	131	0

	Thickness. Ft.	In.	Total. Ft.	In.	
Slate, dark	24	0	155	0	
Coal, Lower Iaeger	0	10	155	10	155′ 10″
Slate, light	62	0	217	10	
Sandstone	20	0	237	10	
Slate, dark	70	0	307	10	
Coal, Castle	0	2	308	0	152′ 2″
Sandstone, **Guyandot**	91	0	399	0	
Slate, mixed with coal	16	0	415	0	
Coal, bone and slate 3′ 0″ / **Coal** 0 8 — **Sewell**	3	8	418	8	110′ 8″
Slate	4	0	422	8	
Sandstone 3′ 0″ / Sandstone, very hard 26 0	29	0	451	8	
Unrecorded	55	8	507	4	
Slate, black	7	0	514	4	
Sandstone, light	30	0	544	4	
Slate, dark	17	0	561	4	142′ 8″
Coal, Little Raleigh	1	0	562	4	
Fire clay	3	0	565	4	
Sandstone, **Lower Raleigh**, porous, micaceous	30	0	595	4	
Slate, dark	10	0	605	4	
Sandstone	4	0	609	4	
Sandstone, conglomerate, to bottom	3	0	612	4	

Davis, Fudge et al. Core Test No. 2 (201).

Fayetteville District, Fayette County, on waters of Packs Branch, 975 feet northwest of Core Test No. 1 (200); authority, New River Co.; elevation, 2058.13′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	25	0	25	0	
Slate, blue	15	0	40	0	
Sandstone, **Lower Nuttall**, gray	38	0	78	0	
Coal, Lower Douglas?	1	0	79	0	79′ 0″
Slate, dark	5	0	84	0	
Sandstone, light	11	0	95	0	
Coal	0	4	95	4	16′ 4″
Slate, dark	10	0	105	4	
Sandstone, **Panther**	30	0	135	4	
Slate, blue	15	0	150	4	
Fire clay	5	0	155	4	60′ 0″
Sandstone, dark, **Upper Iaeger**	69	0	224	4	
Slate, dark	19	0	243	4	
Coal, Lower Iaeger	0	8	244	0	88′ 8″
Sandstone, light 65′ / Sandstone, dark 23 — **Lower Iaeger and Harvey Conglomerate**	88	0	332	0	
Slate, dark	50	0	382	0	
Shale, dark, sandy	70	0	452	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, **Lower Guyandot**, light....	45	0	497	0	
Coal and bone.. 3′ 4″ }					
Sandstone, dark 6 0 } **Sewell**	10	4	507	4	263′ 4″
Coal to bottom.. 1 0 }					

Davis, Fudge et al. Core Test No. 3 (202).

Fayetteville District, Fayette County, on waters of Packs Branch, about 1000 feet southwest from No. 2 (201); authority, New River Co.; elevation, 1890′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface, sand and gravel.....	12	0	12	0
Slate, blue.....	15	0	27	0
Sandstone	43	0	70	0
Slate, blue.....	35	0	105	0
Sandstone, very hard.....	10	0	115	0
Shale, sandy.....	50	0	165	0
Sandstone, very hard.....	35	0	200	0
Slate, blue.....	60	0	260	0
Sandstone, **Guyandot**, conglomerate...	35	0	295	0
Slate, blue.....	20	0	315	0
Sandstone, **Lower Guyandot**.....	35	0	350	0
Slate, black.....	2	0	352	0
Coal (badly mixed) **Sewell**.....	4	0	356	0
Fire clay to bottom.....	2	0	358	0

Smith Brothers Core Test No. 1 (203).

Fayetteville District, Fayette County, on Sugar Creek, at Mt. Hope, just west of where the Giles, Fayette and Kanawha Turnpike crosses the creek; authority, Enoch Smith; elevation, 1710′ B.

	Thickness. Ft.	In.	Total. Ft.	In.
Surface	26	7	26	7
Sandstone	11	1½	37	8½
Slate	1	10½	39	7
Sandstone	0	10	40	5
Slate	0	3	40	8
Sandstone, hard, gray.....	73	9	114	5
Slate	2	10	117	3
Sandstone with streaks of slate.....	3	7	120	10
Slate	1	7	122	5
Sandstone, fine grained.....	26	7	149	0
Slate	1	3	150	3
Sandstone	37	9	188	0
Slate	11	11	199	11
Bone ..... 0′ 1″ }				
Slate ..... 0 2 } **Beckley**	1	5	201	4
Coal ..... 1 2 }				
Slate	0	10	202	2
Sandstone	4	2	206	4
Slate, sandy.....	3	10	210	2

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	1	4½	211	6½	
Slate, sandy	8	0½	219	7	
Sandstone, dark	2	1½	221	8½	
Shale, light, sandy	9	7	231	3½	
Slate, black	0	5	231	8½	
Coal	1	4	233	0½	
Fire clay	0	8	233	8½	
Sandstone, fine grained	16	2½	249	11	
Sandstone and streaks of slate	25	7	275	6	
Slate and sulphur balls	17	0	292	6	
Coal, Fire Creek	1	1	293	7	92′ 3″
Fire clay	0	5	294	0	
Fire clay or light slate	3	9	297	9	
Sandstone, fine	2	5	300	2	
Slate, sandy	4	1	304	3	
Sandstone, fine	0	5½	304	8½	
Slate	9	6	314	2½	
Fire clay and shale	1	9	315	11½	
Sandstone, fine	2	0	317	11½	
Sandstone, hard, gray	5	1½	323	1	
Sandstone and streaks of sandy slate	32	9	355	10	
Slate	2	9	358	7	
Light sandy slate with streaks of sandstone	8	8	367	3	
Sandstone and streaks of slate	9	1	376	4	
Slate	0	5	376	9	
Slate, streaks of sandstone	20	1½	396	10½	
Slate	1	10½	398	9	
Coal (No. 6 Pocahontas?)	2	10½	402	7½	109′ 0½″
Slate to bottom	3	9½	406	5	

Plum Orchard Coal & Land Co. Core Test No. 2 (211).

Fayetteville District, Fayette County, on north side of Packs Branch, 1.5 miles northeast of Herberton and 1.5 miles north of the Fayette-Raleigh County Line; elevation, 1808′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	6	0	6	0	
Sandstone	1	5	7	5	
Coal, Lower Douglas?	0	6	7	11	7′ 11″
Slate, sandy	2	4	10	3	
Sandstone, **Upper Iaeger?**	43	1	53	4	
Slate, sandy	0	10	54	2	
Sandstone	1	4	55	6	
Slate, sandy	0	3	55	9	
Sandstone	3	5	59	2	
Slate, sandy	40	1	99	3	
Sandstone	9	4	108	7	
Shale, sandy	0	4	108	11	
Sandstone	15	4	124	3	
Slate, sandy	0	9	125	0	
Sandstone	0	8	125	8	
Slate, sandy	0	7	126	3	

PLATE XIV.—Outcrop of Beckley Coal at Slab Fork.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	4	10	131	1	
Slate	12	4	143	5	
Coal, laeger?	0	10	144	3	136′ 4″
Slate	0	9	145	0	
Slate, sandy	2	10	147	10	
Sandstone	10	10	158	8	
Sand and sandy slate	2	5	161	1	
Sandstone	48	10	209	11	
Sandstone and sandy slate	1	4	211	3	
Sandstone	32	1	243	4	
Slate	0	10	244	2	
Sandstone	35	9	279	11	
Sandstone and sandy slate	1	8	281	7	
Sandstone	7	6	289	1	
Sandstone and sandy slate	3	6	292	7	
Slate, sandy	5	10	298	5	
Sandstone	29	1	327	6	
Slate, sandy	16	3	343	9	
Sandstone, **Lower Guyandot**	38	1	381	10	
Slate	0	9½	382	7½	
Coal, slate, etc....0′ 4″ } **Sewell**	4	4	386	11½	242′ 8½″
Coal.....4 0 }					
Slate to bottom	4	3½	391	3	

Plum Orchard Coal & Land Co. Core Test (213).

Fayetteville District, Fayette County, on Packs Branch, 3.3 miles northeast of Herberton; authority, New River Collieries Co.; elevation, 1842.16′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Stand-pipe	13	9	13	9	
Sandstone, gray	46	1	59	10	
Sandstone, gray, and slate	9	11	69	9	
Slate and sandstone mixed	11	5	81	2	
Slate and sandstone seams	67	9	148	11	
Coal, Sewell "B"	0	9	149	8	149′ 8″
Slate	2	6	152	2	
Slate and sandstone seams	2	10	155	0	
Sandstone, gray	6	9	161	9	
Sandstone, gray, and slate seams	34	0	195	9	
Slate and sandstone seams	5	5	201	2	
Slate	17	4	218	6	
Coal.....0′ 1″					
Sulphur.....0 1					
Coal.....0 8					
Slate.....0 1½					
Coal.....2 4 } **Sewell**	11	2½	229	8½	80′ 0½″
Slate.....2 9					
Coal.....2 2					
Slate.....1 7½					
Coal.....1 4¼					
Sandstone, dark, with slate seams	6	7½	236	4	
Slate	4	11	241	3	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, dark. 6′ 3″ Sandstone, gray, soft ..... 28 5½ } Upper Sandstone, gray, hard..... 114 3 } Raleigh.	148	11½	390	2½	
Slate, sandy, **Little Raleigh Coal horizon**.....	1	0	391	2½	
Sandstone, gray, soft.....	5	0	396	2½	
Sandstone, gray, and slate, mixed....	11	1	407	3½	
Sandstone, gray.....	17	1	424	4½	
Sandstone, gray, and slate, mixed....	5	8½	430	1	
Sandstone, gray, with slate seams....	42	6	472	7	
Sandstone, gray.....	4	0	476	7	
Slate	1	6	478	1	
Coal and bone seams, **Beckley**.....	0	8	478	9	249′ 0½″
Sandstone, gray, **Quinnimont**.....	28	9½	507	6½	
Shale, gray.....	2	8	510	2½	
Slate and shale, broken up.....	2	10	513	0½	
Sandstone, gray.....	12	0	525	0½	
Slate	14	4	539	4½	
Coal, Fire Creek.....	1	4	540	8½	61′ 11½″
Sandstone, gray.....	6	10	547	6½	
Slate with seams of sandstone.....	16	8½	564	3	
Slate	10	4½	574	7½	
Slate and sandstone mixed.....	27	6½	602	2	
Sandstone, gray.....	12	0	614	2	
Sandstone, gray, with seams of slate and coal.....	22	6	636	8	
Slate	1	2	637	10	
Slate and sandstone, mixed.....	11	1	648	11	
Slate	10	6½	659	5½	
Slate with seams of coal.....	2	3	661	8½	
Slate and fire clay, **No. 7 Pocahontas**.	1	0	662	8½	122′ 0″
Slate and sandstone.....	27	6	690	2½	
Slate	1	0	691	2½	
Fire clay, **No. 6 Pocahontas**.....	1	6	692	8½	30′ 0″
Slate and sandstone mixed.....	6	6	699	2½	
Slate	3	3	702	5½	
Slate and sandstone mixed.....	6	0	708	5½	
Coal, No. 4 Pocahontas.....	0	2	708	7½	15′ 11½″
Slate, sandstone and fire clay, mixed.	5	4	713	11½	
Slate and sandstone, mixed.....	16	1	730	0½	
Sandstone, gray, **Upper Pocahontas**..	32	9½	762	10	
Slate	8	7½	771	5½	
Slate, spongy, with coal seams.....	0	3	771	8½	
Slate	0	8½	772	5	
Coal .....0′ 10″ Slate .....1 4½ } **No. 3 Pocahontas**.. **Coal** 0 3½	2	6	774	11	66′ 3½″
Slate	0	7	775	6	
Fire clay.....	0	11	776	5	
Soft slate.....	0	10	777	3	
Slate with little sandstone seams.....	29	7½	806	10½	
Slate and fire clay.....	1	0	807	10½	
Fire clay.....	5	9½	813	8	

	Thickness. Ft.	In.	Total. Ft.	In.
Soft sandstone and fire clay	1	10	815	6
Sandstone, soft, base of Pottsville	3	9	819	3
Shale, gray	7	4½	826	7½
Shale, red (Mauch Chunk)	9	2	835	9½
Shale, gray, and sandstone mixed	4	9	840	6½
Shale, gray	2	6	843	0½
Shale, gray, and red, mixed	2	5	845	5½
Shale, red, to bottom	12	5	857	10½

The coal at 772′ 5″ would appear to represent the No. 3 Pocahontas, only 545 feet below the Sewell bed, and only 44 feet above the base of the Pottsville Series, thus showing the northwestward thinning of the Pottsville Measures.

McKinley Land Co. Core Test B. (216).

Fayetteville District, Fayette County, on Knob Branch, 1.9 miles nearly due east from Herberton; authority, J. B. Laing; elevation, 1980.34′ L.

	Thickness. Ft.	In.	Total. Ft.	In.
Casing	4	6	4	6
Shale	1	0	5	6
Sandstone, very hard	2	0	7	6
Shale	1	6	9	0
Coal	0	6	9	6
Fire clay	1	0	10	6
Sandstone, very hard	2	0	12	6
Shale	3	0	15	6
Sandstone, very hard	3	0	18	6
Shale, sandstone partings	17	0	35	6
Shale, blue	24	0	59	6
Slate	2	0	61	6
Coal	0	9	62	3
Fire clay	1	0	63	3
Shale	11	2	74	5
Sandstone, very hard	17	2	91	7
Sandstone	30	2	121	9
Shale, sandstone partings	30	3	152	0
Fire clay	1	0	153	0
Shale, black	2	0	155	0
Sandstone	19	5	174	5
Shale, black	1	4	175	9
Sandstone	21	0	196	9
Shale, black	15	3	212	0
Sandstone	9	2	221	2
Slate	2	0	223	2
Coal	1	3	224	5
Fire clay	1	0	225	5
Sandstone and shale	12	2	237	7
Sandstone, very hard	69	9	307	4
Shale	2	0	309	4

	Thickness. Ft.	In.	Total. Ft.	In.
Sandstone, very hard	6	10	316	2
Shale, sandstone partings	53	10	370	0
Coal	0	3	370	3
Fire clay	2	10	373	1
Sandstone, shale partings	7	11	381	0
Sandstone, very hard	13	8	394	8
Sandstone, shale partings	6	2	400	10
Shale, blue	15	3	416	1
Sandstone, very hard	2	7	418	8
Shale, sandstone partings	47	1	465	9
Slate	5	7	471	4
Coal, Sewell	1	5	472	9
Slate, fine coal partings	9	6	482	3
Fire clay	0	10	483	1
Shale, sandstone partings, to bottom	30	5	513	6

E. J. Berwind Core Test B-16 (217).

Fayetteville District, Fayette County, on Boyd Branch, near the Fayette-Raleigh County Line, one mile southeast of Herberton; authority, J. S. Cunningham; completed, July 25, 1913; elevation, 1771.72 L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Surface	20	0	20	0	
Sandstone, hard	30	0	50	0	
Slate	8	0	58	0	
Fire clay	4	0	62	0	
Sandstone, **Harvey**, very hard	103	0	165	0	
Shale, dark, sandy	31	0	196	0	
Sandstone, **Guyandot**	23	0	219	0	
Shale, dark	30	0	249	0	
Slate, black	14	0	263	0	
Sandstone	7	0	270	0	
Shale, dark	26	0	296	0	
Slate, black	4	0	300	0	
Slate with coal spars	0	4	300	4	
Coal, Sewell	4	7	304	11	304' 11"
Fire clay	2	1	307	0	
Shale, dark	10	0	317	0	
Sandstone, **Welch**, hard	24	0	341	0	
Shale, dark	33	0	374	0	
Sandstone, **Upper Raleigh**, very hard	82	0	456	0	
Coal, Little Raleigh	0	6	456	6	151' 7"
Shale, dark	6	6	463	0	
Shale, gray	16	0	479	0	
Sandstone	5	0	484	0	
Shale, sandy, dark	8	0	492	0	
Sandstone	25	0	517	0	
Sandstone, conglomerate	27	0	544	0	
Sandstone	2	0	546	0	
Sandstone, conglomerate	6	0	552	0	
Sandstone	3	0	555	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, conglomerate	62	0	617	0	
Coal and bone, Fire Creek	0	10	617	10	161' 4"
Fire clay	2	2	620	0	
Sandstone to bottom	5	0	625	0	

DIAMOND CORE TESTS IN WYOMING COUNTY.

Several diamond core tests were drilled in Slab Fork District of Wyoming County, near the Raleigh-Wyoming County Line. As these wells occur near Raleigh County, the data contained in these records are of great importance in the study of Raleigh, and five of them, as correlated by Ray V. Hennen in the Wyoming-McDowell Report, are as follows:

Western Pocahontas Coal & Lumber Co. Core Test No. 3 (204).

Slab Fork District, Wyoming County, on Trough Fork of Laurel Fork, at mouth of Big Branch, 3.1 miles southwest of Bolt, and 1.75 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1820.1' L.

	Thickness. Feet.	Total. Feet.	
Surface	17.0	17.0	
Shale, broken, sandy	5.0	22.0	
Shale, dark	9.6	31.6	
Coal, Lower Iaeger	0.3	31.9	31.9'
Fire clay	0.8	32.7	
Sandstone, shale partings	25.0	57.7	
Shale, sandstone partings	17.0	74.7	
Sandstone, shale partings	19.5	94.2	
Shale, sandstone partings	11.6	105.8	
Sandstone, shale partings	11.6	117.4	
Shale, blue	7.9	125.3	
Sandstone, very hard, **Guyandot**	105.1	230.4	
Sandstone, **coal** partings, **Sewell "B"**	0.3	230.7	198.8'
Sandstone, very hard	3.2	233.9	
Sandstone, shale partings	8.0	241.9	
Shale, sandstone partings	7.9	249.8	
Shale, blue	22.9	272.7	
Bone, Sewell "A"	0.5	273.2	42.5'
Sandstone, **Lower Guyandot**	27.2	300.4	
Sandstone, coal partings	2.3	302.7	
Coal, Sewell	2.9	305.6	32.4'
Shale, sandy	2.5	308.1	
Shale, blue	1.1	309.2	
Sandstone, shale partings	11.7	320.9	
Shale, sandstone partings	32.1	353.0	
Shale, dark	1.2	354.2	

		Thickness. Feet.	Total. Feet.	
Coal, Welch		0.3	354.5	48.9′
Sandstone, very hard		154.5	509.0	
Sandstone, conglomerate		8.0	517.0	
Shale, sandy		10.5	527.5	
Slate		0.5	528.0	
Bone	0.5′			
Slate, black	0.4			
Bone	0.5			
Coal	1.0	Beckley	4.2	532.2	177.7′
Slate, black	0.3			
Coal	1.5			
Fire clay		2.2	534.4	
Shale, sandy		4.3	538.7	
Sandstone		1.0	539.7	
Sandstone, shale partings		23.0	562.7	
Sandstone		4.9	567.6	
Coal		0.2	567.8	
Sandstone		17.9	585.7	
Shale, sandy		15.1	600.8	
Shale, blue		1.3	602.1	
Coal, Fire Creek		3.9	606.0	73.8
Sandstone, shale partings, to bottom		1.5	607.5	

Western Pocahontas Coal & Lumber Co. Core Test No. 4 (205).

Slab Fork District, Wyoming County, on Laurel Fork, at mouth of Lewis Fork, 3.6 miles south of Bolt, and 1.25 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1823.8′ L.

	Thickness. Feet.	Total. Feet.	
Casing	9.0	9.0	
Shale, sandy	9.1	18.1	
Shale	0.7	18.8	
Coal, Iaeger	0.3	19.1	19.1′
Sandstone	5.1	24.2	
Sandstone, coal partings	2.7	26.9	
Sandstone	2.2	29.1	
Slate	1.0	30.1	
Sandstone, shale partings	9.5	39.6	
Sandstone, very hard	16.6	56.2	
Sandstone, shale partings	18.3	74.5	
Sandstone, very hard	3.3	77.8	
Sandstone, shaly	2.1	79.9	
Sandstone, very hard	2.2	82.1	
Shale, sandy	4.9	87.0	
Shale, blue, **Sandy Huff**	44.0	131.0	
Coal, Castle	1.4	132.4	113.3′
Sandstone	4.1	136.5	
Sandstone, shale partings	2.1	138.6	
Sandstone, very hard, **Guyandot**	73.4	212.0	
Shale, dark	7.1	219.1	
Coal, Sewell "B"	0.4	219.5	87.1′

	Thickness. Feet.	Total. Feet.	
Slate	0.2	219.7	
Fire clay	2.1	221.8	
Shale, sandy	21.2	243.0	
Shale, dark	1.6	244.6	
Sandstone, shale partings	4.3	248.9	
Shale, dark	2.7	251.6	
Shale, sandy	1.2	252.8	
Shale, dark	9.1	261.9	
Sandstone	26.9	288.8	
Coal, Sewell "A"	0.5	289.3	69.8'
Slate	0.2	289.5	
Shale, sandy	30.3	319.8	
Slate	0.9	320.7	
Coal, Sewell	2.1	322.8	35.5'
Fire clay	0.9	323.7	
Shale, sandy	55.9	379.6	
Sandstone	19.8	399.4	
Fire clay	4.0	403.4	
Sandstone	10.7	414.1	
Sandstone, very hard	15.0	429.1	
Shale, sandy	10.7	439.8	
Sandstone, very hard	1.9	441.7	
Shale, sandy	16.1	457.8	
Shale, blue	30.4	488.2	
Shale, sandy	4.4	492.6	
Sandstone, shale partings	17.4	510.0	
Shale, blue	11.3	521.3	
Sandstone, very hard	3.4	524.7	
Coal, Beckley "Rider"	0.1	524.8	
Fire clay	5.7	530.5	
Shale, sandy	4.4	534.9	
Sandstone	5.2	540.1	
Shale, blue	0.9	541.0	
Slate	0.1	541.1	
Coal, Beckley	0.3	541.4	218.6'
Fire clay	3.4	544.8	
Sandstone	12.9	557.7	
Sandstone, coal partings	11.6	569.3	
Sandstone	22.8	592.1	
Sandstone, coal partings	3.3	595.4	
Coal	0.05	595.45	
Sandstone, shale partings	4.6	600.05	
Shale, blue	0.4	600.45	
Coal	0.05	600.5	
Shale, sandy	14.2	614.7	
Shale, blue	1.9	616.6	
Coal, Fire Creek	6.1	622.7	81.3'
Shale, blue, to bottom	2.3	625.0	

Western Pocahontas Coal & Lumber Co. Core Test No. 5 (206).

Slab Fork District, Wyoming County, on Laurel Fork, 0.5 mile south of McGraw and 4 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1745.7′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Casing	13	6	13	6	
Sandstone, very hard	4	8	18	2	
Sandstone, dark, shale partings	4	5	22	7	
Shale, dark	2	1	24	8	
Shale, blue	2	7	27	3	
Shale, white	3	3	30	6	
Sandstone, very hard	12	1	42	7	
Shale, dark	8	3	50	10	
Sandstone	29	7	80	5	
Shale, dark	2	3	82	8	
Sandstone, **Lower Guyandot**	32	2	114	10	
Coal, Sewell	2	0	116	10	116′ 10″
Fire clay	0	8	117	6	
Shale, sandstone partings	63	6	181	9	
Shale, blue	12	6	193	6	
Shale, sandstone partings	20	2	213	8	
Shale, black	0	11	214	7	
Sandstone, shale partings	8	7	223	2	
Sandstone, soft	18	4	241	6	
Sandstone, very hard, **Lower Raleigh**	54	9	296	3	
Shale, dark	1	3	297	6	
Sandstone, soft	1	4	298	10	
Sandstone, very hard	11	11	310	9	
Shale, blue	3	1	313	10	
Sandstone	13	0	326	10	
Shale, sandstone partings	0	11	327	9	
Sandstone	8	10	336	7	
Sandstone with **coal** partings, **Beckley**	1	3	337	10	221′ 0″
Shale, blue	0	10	338	8	
Sandstone	0	3	338	11	
Shale, blue	1	2	340	1	
Shale, sandy	1	1	341	2	
Sandstone	2	6	343	8	
Shale, blue	3	4	347	0	
Sandstone	3	8	350	8	
Shale, blue	0	3	350	11	
Sandstone	11	2	362	1	
Shale, sandy	1	6	363	7	
Sandstone, coal partings	9	7	373	2	
Sandstone	2	6	375	8	
Shale, black	0	5	376	1	
Slate	0	2	376	3	
Bone 0′ 1″ / Shale, dark 0 3 / Bone 1 1 — **Beckley**	1	5	377	8	39′ 10″
Shale, dark	1	5	379	1	
Sandstone	20	0	399	1	
Shale, dark	6	6	405	7	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, sandy	2	3	407	10	
Coal, Fire Creek	1	10	409	8	32′ 0″
Slate	0	1	409	9	
Shale, dark	4	1	413	10	
Bone	0	11	414	9	
Slate	0	11	415	8	
Shale, dark	0	9	416	5	
Shale, sandy	4	4	420	9	
Shale, blue	1	3	422	0	
Sandstone, shale partings	14	9	436	9	
Shale, blue	15	11	452	8	
Slate	0	9	453	5	
Shale, blue	6	2	459	7	
Shale, sandstone partings	4	7	464	2	
Shale, blue	12	7	476	9	
Bone, Little Fire Creek	0	2	476	11	67′ 3″
Shale, black	1	6	478	5	
Shale, sandy	14	11	493	4	
Shale, sandstone partings	1	4	494	8	
Shale, sandy	10	6	505	2	
Shale, dark	27	3	532	5	
Shale, sandy	30	1	562	6	
Sandstone, white	1	0	563	6	
Shale, sandy	4	8	568	2	
Sandstone, white	3	6	571	8	
Sandstone, conglomerate	4	7	576	3	

Western Pocahontas Coal & Lumber Co. Core Test No. 8 (207).

Slab Fork District, Wyoming County, on Milam Fork of Laurel Fork, 4 miles west from Hotchkiss, and 3 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1837.6′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Clay	9	8	9	8	
Sandstone, slaty	5	4	15	0	
Sandstone, broken, slaty	17	0	32	0	
Slate	5	0	37	0	
Slate, blue	8	6	45	6	
Clay and gravel	2	6	48	0	
Slate, blue	6	0	54	0	
Slate, sandy	9	0	63	0	
Sandstone	19	0	82	0	
Sandstone, medium hard	19	0	101	0	
Sandstone, hard	11	0	112	0	
Sandstone, hard, broken	40	0	152	0	
Sandstone	25	2	177	2	
Coal, Sewell "B"	0	5	177	7	177′ 7″
Slate	2	5	180	0	
Sandstone	31	4	211	4	
Slate, sandy	5	8	217	0	
Slate, dark, hard bands	12	6	229	6	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone	1	3	230	9	
Coal, Sewell "A"	0	3	231	0	53′ 5″
Slate, coal partings	1	0	232	0	
Sandstone, **Lower Guyandot**	44	0	276	0	
Sulphur band	0	2	276	2	
Coal ....0′ 9″ ⎫ Slate ....0 3 ⎬ **Sewell**	2	8	278	10	47′ 10″
Coal ....1 8 ⎭					
Slate, black	4	2	283	0	
Slate, sandy	43	6	326	6	
Sandstone, **Upper Raleigh**	42	0	368	6	
Coal	0	1	368	7	89′ 9″
Sandstone	4	5	373	0	
Slate, sandy	4	0	377	0	
Slate, black	1	0	378	0	
Slate, sandy	4	0	382	0	
Sandstone, slaty	1	0	383	0	
Sandstone	7	7	390	7	
Coal, Little Raleigh	1	5	392	0	23′ 5″
Slate, black	1	0	393	0	
Slate, sandy	16	0	409	0	
Sandstone, slaty	6	0	415	0	
Slate, sandy	18	0	433	0	
Slate, dark, hard bands	17	0	450	0	
Slate, sandy	12	0	462	0	
Slate	6	0	468	0	
Sandstone	21	6	489	6	
Slate, sandy	11	6	501	0	
Slate, dark, hard bands	6	9	507	9	
Coal, Beckley	2	2	509	11	117′ 11″
Sandstone, **Quinnimont**	66	8	576	7	
Coal, Fire Creek	5	0	581	7	72′ 8″
Fire clay, slaty	5	5	587	0	
Slate	5	0	592	0	
Slate, sandy	41	0	633	0	
Slate, soft, small coal partings	4	4	637	4	
Coal, Little Fire Creek	1	5	638	9	57′ 2″
Slate, soft, small coal partings	1	9	640	6	
Sandstone, slaty	7	6	648	0	
Slate, dark, sandy	24	0	672	0	
Shale, slaty	4	0	676	0	
Slate, sandy	10	0	686	0	
Sandstone, slaty	21	0	707	0	
Sandstone	9	0	716	0	
Sandstone, conglomerate	1	0	717	0	
Sandstone, slate partings	6	0	723	0	
Sandstone	7	0	730	0	
Sandstone, very hard	12	0	742	0	
Sandstone	21	0	763	0	
Shale, brown	2	0	765	0	
Sandstone	6	0	771	0	
Shale, black, hard bands	7	0	778	0	
Slate, dark	4	11	782	11	
Coal, No. 6 Pocahontas	0	6	783	5	144′ 8″
Fire clay	1	7	785	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Shale, light	2	0	787	0	
Shale, sandy	2	0	789	0	
Sandstone, **Eckman**	22	8	811	8	
Coal, No. 4 Pocahontas	0	2	811	10	28′ 5″
Slate, sandy	8	2	820	0	
Sandstone, **Upper Pocahontas**	68	0	888	0	
Slate, sandy	3	0	891	0	
Coal 1′ 1″ / **Coal, bony** 0 4 / **Coal** 1 1 — **No. 3 Pocahontas**	2	6	893	6	81′ 8″
Slate, sandy	10	6	904	0	
Sandstone, slaty	12	0	916	0	
Slate, sandy	3	1	919	1	
Coal 0′ 6″ / **Coal, bony** 0 4 / **Coal** 0 4 — **No. 2 "A" Pocahontas**	1	2	920	3	26′ 9″
Slate, sandy	4	9	925	0	
Sandstone	3	0	928	0	
Slate, sandy	6	9	934	9	
Coal, dirty, No. 2 Pocahontas	0	7	935	4	15′ 1″
Shale	2	8	938	0	
Slate, sandy	3	0	941	0	
Sandstone, **Vivian**	29	0	970	0	
Sandstone, hard, coal partings (**No. 1 Pocahontas**)	6	0	976	0	40′ 8″
Sandstone	11	0	987	0	
Sandstone, slaty	11	0	998	0	
Slate, sandy, to bottom	2	0	1000	0	

Western Pocahontas Coal & Lumber Co. Core Test No. 3 (208).

Slab Fork District, Wyoming County, on Marsh Fork of Slab Fork, 0.8 mile northwest of Maben; authority, Western Pocahontas Coal and Lumber Company; well starts 145′ below 1′ 5″ of coal; elevation of top of well, 1683′ L.

	Thickness. Ft.	In.	Total. Ft.	In.	
Sand and boulders	9	0	9	0	
Sandstone	34	0	43	0	
Slate, sandy	19	8	62	8	
Coal, Fire Creek	1	11	64	7	64′ 7″
Slate, sandy	4	5	69	0	
Sandstone, slaty	6	0	75	0	
Sandstone	5	0	80	0	
Sandstone, very hard	26	0	106	0	
Slate	42	4	148	4	
Coal	0	4	148	8	84′ 1″
Slate, sandy	10	4	159	0	
Sandstone, hard	26	0	185	0	
Slate	4	8	189	8	
Coal, slaty, No. 9 Pocahontas	0	6	190	2	41′ 6″
Slate	3	10	194	0	

	Thickness. Ft.	In.	Total. Ft.	In.	
Sandstone, slaty	11	0	205	0	
Sandstone	14	0	219	0	
Slate	2	0	221	0	
Slate, sandy	4	0	225	0	
Sandstone, slaty	8	0	233	0	
Slate, sandy	13	5	246	5	
Coal, No. 8 Pocahontas	0	7	247	0	56′ 10″
Slate, sandy	16	0	263	0	
Sandstone, **Flattop Mountain**	37	6	300	6	
Coal, No. 7 Pocahontas	1	7	302	1	55′ 1″
Slate	6	11	309	0	
Sandstone, slaty	15	0	324	0	
Slate	2	2	326	2	
Coal, No. 6 Pocahontas	0	7	326	9	24′ 8″
Slate, sandy	10	3	337	0	
Sandstone	80	0	417	0	
Slate, black	0	8	417	8	
Coal and slate. 0′ 3″					
Slate, black. . . . 0 7					
Coal 1 0					
Slate 2 2					
Bone 0 1	**No. 3 Pocahontas**	6	7	424	3	97′ 6″
Coal 0 0½					
Bone 0 4					
Coal 0 5½					
Bone 0 7					
Coal 1 1					
Slate, sandy	1	3	425	6	
Sandstone	3	0	428	6	
Shale, sandy, to bottom	13	0	441	6	17′ 3″

The records of the two following core tests, listed in the Table of Summarized Record of Core Tests, and shown on Map II, are published in the Wyoming-McDowell County Report, lack of space and their distance from the Raleigh-Wyoming County Line prohibiting their republication here:

Wyoming-Pocahontas Coal & Coke Co. Core Test No. 6 (209).

Slab Fork District, Wyoming County, on Laurel Creek, near the mouth of Cloverlick Branch and 8 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1369.6′ L.; drilled to depth of 682.40′.

Western Pocahontas Coal & Coke Co. Core Test No. 7 (210).

Slab Fork District, Wyoming County, on Laurel Branch of Laurel Fork, 2.0 miles northwest of Saulsville, and 5.25 miles west of the Raleigh-Wyoming County Line; authority, E. M. Merrill; elevation, 1863.1′ L.; drilled to depth of 709.5′.

The following is a general section of the Pottsville Series west of the Kanawha and New Rivers, as determined in the study of Kanawha, Boone, Logan, Mingo, Wyoming, Raleigh, Mercer, McDowell and Summers Counties, and read before the West Virginia Coal Mining Institute at Huntington, W. Va., by Ray V. Hennen, Assistant Geologist, and later modified by him in Chapter IV of the Wyoming-McDowell County Report of the State Survey, with some additions by the writer to correspond with the results found in the Raleigh, Mercer and Summers area:

General Section of the Pottsville Measures.

	Thickness. Feet.	Total. Feet.	
Kanawha Group (1830 feet).			
Sandstone, Homewood, massive, grayish white, capping knobs north edge, Oceana District	75 to 100	100	
Kanawha Black Flint, marine fossil horizon, not seen in area	0 to 10	110	
Coal, Stockton, multiple-bedded, splinty layers, mined extensively in the Kanawha Valley	0 to 10	120	120′
Shale, sandy, with impure fire clays	25 to 50	170	
Sandstone, Upper Coalburg, coarse, massive, gray, often weathering into "chimney rock" columns on hill summits	50 to 80	250	
Shale	5 to 10	260	
Coal, Coalburg, multiple-bedded, splinty layers, mined extensively in Kanawha Valley	2 to 10	270	150′
Fire clay, impure, sandy shales	0 to 20	290	
Coal, Little Coalburg, splinty, not mined commercially in State	0 to 3	293	
Fire clay, impure, sandy shale, with thin coals	0 to 22	315	
Sandstone, Lower Coalburg, forms great cliffs	20 to 40	355	
Shale, sandy	5 to 9	364	
Coal, Buffalo Creek, multiple-bedded, hard, mined commercially in Mingo County.	0 to 6	370	100′
Fire clay and shale	35 to 55	425	
Limestone, Buffalo Creek (Winifrede), hard, gray, lenticular, with **marine fossils,** on Island Creek, Logan County, and at Rawl, Mingo County	0 to 2	427	
Sandstone, Upper Winifrede, massive, yellowish gray	20 to 30	457	
Shale	2 to 3	460	

	Thickness. Feet.	Total. Feet.	
Coal, Winifrede, multiple-bedded, hard, splinty, mined extensively in Kanawha Valley	1 to 10	470	100
Fire clay, impure, and sandy shale	0 to 20	490	
Coal, Lower Winifrede, multiple-bedded, splinty	0 to 2	492	
Sandstone, Lower Winifrede, massive	10 to 23	515	
Shale	1 to 2	517	
Coal, Chilton "A", multiple-bedded, not mined commercially in State	0 to 3	520	50'
Fire clay, impure, and shale	10 to 18	538	
Sandstone, Upper Chilton, massive, medium grained, micaceous	20 to 40	578	
Coal, Chilton "Rider", splinty, multiple-bedded, upper portion of seam mined extensively on Spruce Fork, Logan County	0 to 4	582	
Fire clay shale, probable horizon of the marine fossiliferous **Winifrede Limestone** of Winifrede Creek, Kanawha County and **Indian Gap** in Raleigh County	0 to 20	602	
Coal, Chilton, multiple-bedded, splinty, lower portion of bed mined extensively on Spruce Fork, and same as mined on Dingess Run and Buffalo Creek, in Logan County	1 to 8	610	90'
Fire clay, impure, and shale	0 to 5	615	
Sandstone, Lower Chilton, massive	0 to 30	645	
Coal, Little Chilton, double-bedded, split off seam mined on Dingess Run, and Rum Creek, Logan County	0 to 2	647	
Sandstone, Hernshaw, massive	20 to 49	696	
Coal, Hernshaw, multiple-bedded, mined on Lens Creek, Kanawha County, where it is known as "Black Band" seam	0 to 4	700	90'
Fire clay and sandy shales	1 to 5	705	
Sandstone, Naugatuck	15 to 21	726	
Coal, Dingess, multiple-bedded, gas type, once mined commercially at Dingess, and may be same as Williamson Coal of Mingo County	1 to 4	730	30'
Shale	1 to 5	735	
Sandstone, Williamson	5 to 20	755	
Shale	1 to 5	760	
Limestone, Dingess, gray and hard, frequently brown and silicious, lenticular, ferriferous, with **marine fossils** widely persistent in Kanawha, Boone, Logan and Mingo Counties	0 to 2	762	
Shale, dark green, sandy, with iron ore nodules and plant fossils	0 to 30	792	
Coal, Williamson, multiple-bedded, splinty, mined commercially at Williamson, Mingo County, and Auburn, Kentucky	1 to 8	800	70'

	Thickness. Feet.	Total. Feet.	
Fire clay, impure, and shale	1 to 5	805	
Sandstone, Upper Cedar Grove	10 to 40	845	
Shales, dark gray, with iron ore nodules and plant fossils, and holding the marine fossiliferous **Seth Limestone** of Boone County, near base	20 to 50	895	
Coal, Cedar Grove, multiple-bedded, splinty; when normal, the base of upper bench is hard and splinty, and reverse is true of lower bench; mined extensively in Kanawha Valley; same as **Island Creek** seam; also the **Red Jacket** or **Upper Thacker** bed of Mingo County	2 to 5	900	100'
Fire clay and shale	0 to 10	910	
Sandstone, Middle Cedar Grove, frequently holding a thin **coal**	0 to 60	970	
Coal, Lower Cedar Grove, multiple-bedded, splinty at top, and is the **lower bench** of the **Cedar Grove** proper of Kanawha; also of the **Island Creek** bed of Logan; likewise the same as the **Lower Thacker** of Mingo County	2 to 5	975	75'
Fire clay, impure, and shale	1 to 10	985	
Sandstone, Lower Cedar Grove, massive	20 to 30	1015	
Coal, Alma "A", not mined commercially in State	0 to 1	1016	
Shale, dark gray, with iron ore nodules and plant fossils	5 to 9	1025	
Coal, Alma, multiple-bedded, splinty layers, same as **Draper** seam of Logan County, mined extensively in latter and in Mingo, Boone and Fayette Counties	2 to 5	1030	55'
Fire clay, impure, and shale	0 to 5	1035	
Sandstone, Monitor ("Logan") massive, bluish gray, medium grained, micaceous	20 to 40	1075	
Shale, sandy	1 to 5	1080	
Coal, Little Alma, multiple-bedded, slaty, not mined commercially in State	0 to 3	1083	53'
Sandstone, Peerless, massive, micaceous	15 to 29	1112	
Shale, sandy, gray, flaggy	1 to 5	1117	
Limestone, Campbell Creek, dark gray, hard, silicious, lenticular, carrying marine fossils at Kayford, Kanawha County	0 to 2	1119	
Shale, flaggy and sandy, with iron ore nodules and plant fossils	10 to 20	1139	
Coal, Campbell Creek, multiple-bedded, gas type, includes **Peerless** and **No. 2 Gas** seams in Kanawha Valley, and **Warfield, Freeburn, Burnwell**, and **Upper War Eagle** beds of Mingo County	2 to 6	1145	62'
Sandstone, Lower Campbell Creek	0 to 30	1175	

	Thickness. Feet.	Total. Feet.	
Coal, Lower Campbell Creek, multiple-bedded	2 to 4	1179	
Sandstone, Brownstown, massive, bluish gray and brown, micaceous	10 to 17	1196	
Coal, Powellton "A", double-bedded, not mined commercially in State	0 to 1	1197	
Shale, sandy, flaggy and laminated	10 to 20	1217	
Coal, Powellton, multiple-bedded, both gas and splinty type, mined extensively in Kanawha Valley, and same as **Hatfield Tunnel** vein of Mingo County, mined at Powellton, Fayette County	0 to 3	1220	75′
Shale, dark, laminated	10 to 20	1240	
Limestone, Stockton, silicious, lenticular	0 to 4	1244	
Shales, dark, with **marine fossils** in southeastern Boone and northern Wyoming Counties	25 to 34	1278	
Coal, Matewan, double-bedded, soft gas type, not mined commercially in State	0 to 5	1283	63′
Sandstone, Matewan, massive	20 to 37	1320	
Coal, Eagle "A", soft gas type, irregular, not mined in the State	0 to 2	1322	39′
Sandstone, Eagle, massive, coarse, gray and brown	20 to 37	1359	
Shale, carrying **marine fossils** on head of Little Cub Creek, near Botsford, Wyoming County, Dorothy in Raleigh, and Crescent in Fayette County	5 to 10	1369	
Coal, Eagle, both gas and splint type, multiple-bedded, mined extensively in Kanawha Valley, and same as **Middle War Eagle** seam of Turkey Creek, Mingo County, and **"Mohawk"** bed of western McDowell	1 to 6	1375	53′
Fire clay, impure, and shale	0 to 5	1380	
Sandstone, Bens Creek	0 to 27	1407	
Coal, Bens Creek, multiple-bedded, soft, gas, columnar type, and probably a split off the Eagle proper of the Kanawha Valley	0 to 3	1410	35′
Fire clay and shale	5 to 10	1420	
Sandstone, Decota, massive	40 to 57	1477	
Shale, carrying **marine fossils** at Oceana and northwest of Elklick, Wyoming County	5 to 10	1487	
Coal, Little Eagle, multiple-bedded, soft gas, columnar type, not mined	1 to 3	1490	80′
Sandstone, flaggy and shaly	0 to 30	1510	
Coal, Cedar, multiple-bedded, soft gas type, once mined commercially at Cedar, Mingo County, and probably a split off the Little Eagle proper of the Kanawha Valley	0 to 4	1514	24
Sandstone, Grapevine, making cliffs along the N. & W. Ry. grade at mouth of Grapevine Creek, Mingo County	25 to 30	1544	
Shale, Eagle, dark, to black, laminated, with **marine fossils**	15 to 20	1564	

	Thickness. Feet.	Total. Feet.	
Limestone, Eagle, dark, brittle, hard, lenticular, with **marine fossils** widely persistent from the Kanawha to Tug Fork	0 to 2	1566	52′
Shale, Eagle, black, with iron ore nodules and **marine fossils**	10 to 25	1591	
Coal, Little Cedar, not mined commercially in the State	0 to 1	1592	26′
Sandstone, Lower War Eagle, flaggy, micaceous	20 to 30	1622	
Slate, black, with plant fossils	5 to 10	1632	
Coal, Lower War Eagle, multiple-bedded, soft gas type, not mined commercially in the State	0 to 3	1635	43′
Shale	1 to 5	1640	
Sandstone, Upper Gilbert, massive, grayish white, medium grained, making cliffs opposite Gilbert, Mingo County.	40 to 50	1690	
Shale, black, laminated, silicious, with iron ore nodules, at Oceana, carrying the dark gray, silicious, lenticular **Oceana Limestone**—0″ to 24″—near top	10 to 15	1705	
Sandstone, bluish gray to dark, laminated	10 to 15	1720	
Coal, Glenalum Tunnel, multiple-bedded, soft, gas, columnar type, much split up with partings of slate 1 to 2 feet thickness, not mined commercially in State	0 to 15	1735	100′
Sandstone, Lower Gilbert, massive, grayish white, lower of twin cliffs opposite Gilbert, Mingo County	50 to 80	1815	
Coal, Gilbert "A", multiple-bedded, soft, gas, columnar type, observed only in southwest edge of McDowell County.	1 to 0	1815	
Shale, dark, flaggy, laminated, with **marine fossils,** on Clear Fork, Wyoming County	40 to 5	1820	
Coal, Gilbert, multiple-bedded, gas, soft, columnar type, not mined commercially	0 to 4	1824	
Shale, sandy, lenticular	0 to 6	1830	95
New River Group (1300 feet).			
Sandstone, Nuttall, current-bedded, medium grained to coarse, frequently pebbly, making great cliffs along the N. & W. Ry. grade between War Eagle and Wyoming Station (formerly Dotson), where it is locally known as the **"Dotson"**; also same as **Bearwallow Conglomerate** of the Tazewell Folio of the U. S. Geological Survey, forming large cliffs along New River from Hawks Nest to Sewell, and along Paint Creek to Paintsville, Fayette County, along Marsh Fork at Danville, Raleigh County	75 to 125	1955	

	Thickness. Feet.	Total. Feet.	
Coal, Douglas "A", soft, slaty, observed only in southern edge of McDowell County	1 to 0	1955	
Shale, sandy, lenticular	50 to 10	1965	
Coal, Douglas, generally single-bedded, gas, soft, columnar type, mined commercially at Douglas Station, McDowell County	1 to 5	1970	140
Fire clay shale, sandy	0 to 5	1975	
Sandstone, Lower Nuttall, heavy to current bedded, sometimes conglomeratic, grayish white to brown, making great vertical cliffs along banks of Clear Fork and on down Guyandot River to Justice in Wyoming County; probably a split off the **Nuttall** proper of the New River region of Fayette County	50 to 100	2075	
Shale, Douglas, dark, sandy, laminated, with **fresh or brackish water fossils** at base	5 to 15	2090	
Coal, Lower Douglas, multiple-bedded, soft, gas, columnar type, not mined commercially in the State	1 to 5	2095	125'
Shale, gray and sandy	1 to 5	2100	
Sandstone, Panther, massive conglomerate to heavy and current-bedded, grayish white to brown, forms cliff along N. & W. Ry. grade between Panther and Douglas Station, McDowell County, and probably upper portion of **"Dismal Conglomerate"**	40 to 50	2150	
Shale, dark and sandy	0 to 10	2160	
Coal, Iaeger "B", multiple-bedded, soft, gas, columnar type, observed only on headwaters of Panther Creek, McDowell County	3 to 0	2160	65'
Sandstone, Upper Iaeger, massive, medium grained, gray to brown, making cliffs 175 feet above Tug Fork at Iaeger, McDowell County	30 to 50	2210	
Coal, Iaeger "A", slaty and sulphurous, observed only on headwaters of Panther Creek, McDowell County	1.6 to 0	2210	50'
Shale, Upper Iaeger, dark, argillaceous, laminated, with plant fossils at base	5 to 60	2270	
Coal, Iaeger, generally double-bedded, soft, columnar, mined locally at Iaeger, McDowell County, 100 feet above N. & W. Ry. grade	2 to 5	2275	65
Shale, sandy	0 to 5	2280	
Sandstone, Middle Iaeger, massive, grayish white, medium grained to coarse, forms cliffs at Iaeger, McDowell County	30 to 40	2320	
Coal, Lower Iaeger, double-bedded, soft, columnar, not mined commercially in State	0 to 2	2322	47'

	Thickness. Feet.	Total. Feet.	
Fire clay shale	0 to 3	2325	
Sandstone, Lower Iaeger, massive, gray and brown, medium grained, micaceous	20 to 30	2355	
Shale, Lower Iaeger, dark gray, argillaceous, laminated	20 to 35	2390	
Sandstone, Harvey Conglomerate, current-bedded, often massive and conglomeratic, medium grained to coarse, grayish white to brown, lenticular, forms great cliffs near ridge summits, ½ mile S. W. of Pando and ¾ mile N. 60° W. of English, McDowell County	125 to 25	2415	
Shale, Sandy Huff, dark gray, argillaceous, laminated, cropping flush with N. & W. Ry. grade, just below mouth of Sandy Huff Branch, McDowell County	5 to 40	2455	
Coal, Castle, multiple-bedded, soft, columnar, irregular, not mined commercially	2 to 0	2455	133′
Sandstone, Guyandot, massive, current-bedded, often conglomeratic, medium grained to coarse, lenticular, grayish white, forms great cliffs in Wyoming, McDowell, Fayette, Raleigh and Mercer Counties	50 to 75	2530	
Shale, sandy and dark	0 to 5	2535	
Coal, Sewell "B", multiple-bedded, soft, columnar, attains minable dimensions only in southeastern Wyoming and McDowell Counties, erroneously correlated with Iaeger bed in Volume II (A)	0 to 5	2540	85′
Shale, sandy, flaggy and laminated	10 to 24	2564	
Coal, Sewell "A", double-bedded, soft, columnar, not mined commercially	0 to 1	2565	25′
Sandstone, Lower Guyandot, massive to current-bedded, medium grained, grayish white, lenticular, forms cliffs in Wyoming, McDowell, Raleigh and Mercer Counties	0 to 50	2615	
Shale, dark, with plant fossils	0 to 5	2620	
Coal, Sewell, generally double-bedded, soft, columnar, mined commercially in Fayette and Raleigh Counties, also in McDowell, where it is known as the "Davy" bed	0 to 10	2630	65′
Shale, gray, sandy, lenticular	40 to 5	2635	
Sandstone, Welch, massive to current-bedded, grayish white, lenticular, forms great cliffs along Tug Fork between Welch and Roderfield, and on Dry Fork near Bradshaw	0 to 50	2685	
Shale. dark, argillaceous, lenticular	0 to 5	2690	

	Thickness. Feet.	Total. Feet.	
Coal, Welch, multiple-bedded, soft, columnar, mined commercially at Hemphill, Premier, Coalwood, 1 mile east of Ritter, and 1.5 miles S. E. of Beartown, McDowell County	0 to 5	2695	65′
Shale, gray, sandy	0 to 5	2700	
Sandstone, Upper Raleigh, heavy to current-bedded, often conglomeratic, grayish white to brown, forms great cliffs in Fayette, Raleigh, Wyoming and McDowell Counties	50 to 75	2775	
Coal, Little Raleigh "A"	0 to 3	2778	
Shale, sandy	0 to 25	2803	
Coal, Little Raleigh, multiple-bedded, soft, columnar, known as **"Snake Root"** bed in McDowell County, not mined in State	4 to 2	2805	110′
Shale, sandy, lenticular	15 to 5	2810	
Sandstone, Lower Raleigh, massive to current-bedded, lenticular, prominent cliff maker in Raleigh County	100 to 50	2860	
Coal, Beckley "Rider"	0 to 2	2862	
Shale, dark gray, argillaceous, lenticular	0 to 17	2879	
Coal, Beckley, multiple-bedded, soft, columnar, mined commercially in Raleigh and McDowell Counties, same as **"War Creek"** bed of latter area, known as the **Slab Fork** and **Winding Gulf** seam in Raleigh County	0 to 10	2889	84′
Sandstone, Quinnimont, lenticular	0 to 66	2955	
Shale, Quinnimont, dark gray, silicious and argillaceous, laminated, lenticular	0 to 35	2990	
Coal, Fire Creek, multiple-bedded, soft, columnar, mined commercially in Fayette and Raleigh Counties, same as the locally known **"Lower Beckley"** at Slab Fork, latter county	0 to 5	2995	106′
Shale, sandy, with sandstone layers	10 to 28	3023	
Coal, Little Fire Creek, multiple-bedded, soft, columnar, not mined commercially in State	0 to 2	3025	30′
Sandstone, Pineville, massive to current-bedded, forming sheer cliff almost 100 feet high on Guyandot River at Pineville, Wyoming County	50 to 65	3090	
Shale, sandy	0 to 5	3095	
Coal, No. 9 Pocahontas, multiple-bedded, soft, columnar, not mined commercially in State	0 to 5	3100	75′
Shale and sandstone mixed	0 to 28	3128	
Coal, No. 8 Pocahontas, impure, soft, columnar, not mined commercially in State	0 to 2	3130	30′

	Thickness. Feet.	Total. Feet.	
Pocahontas Group (720 feet).			
Sandstone, Flattop Mountain, massive to current-bedded, medium grained, micaceous, bluish gray to brown, capping ridge summit of Flattop Mountain at Coaldale, Mercer County.....	20 to 50	3180	
Shale, Rift, dark gray, with argillaceous and silicious layers, cropping in bed of Big Creek at Rift, McDowell County..	30 to 17	3197	
Coal, No. 7 Pocahontas, multiple-bedded, soft, columnar, not mined commercially in State	0 to 3	3200	70′
Shale, gray and sandy.....	0 to 5	3205	
Sandstone, Pierpont, heavy to current-bedded, medium grained, hard, micaceous bluish gray to light gray, making great cliff flush with Virginian Ry. grade ¼ mile southeast of Pierpont, Wyoming County	40 to 60	3265	
Shales, sandy, and sandstone, alternating.	0 to 35	3300	
Shale, Royal, buff, sandy, with **fresh or brackish water fossils** in Raleigh and Mercer Counties	0 to 5	3305	
Coal, No. 6 Pocahontas, multiple-bedded, soft, columnar, mined commercially in Mercer County	0 to 5	3310	110′
Shale, sandy	0 to 5	3315	
Sandstone, Eckman, massive to current-bedded, medium grained, buff to bluish gray, once quarried in hill due east of Eckman, McDowell County, often cuts out the No. 5 and No. 4 Pocahontas Coals	40 to 67	3382	
Coal, No. 5 Pocahontas, multiple-bedded, soft, columnar, not mined commercially in State	0 to 5	3387	77′
Shale, sandstone and dark shale, with plant fossils abundant	0 to 20	3407	
Coal, No. 4 Pocahontas, multiple-bedded, soft, columnar, mined commercially on Elkhorn Creek and Tug Fork, McDowell County	0 to 8	3415	28′
Shale, sandy	0 to 5	3420	
Sandstone, Upper Pocahontas, massive to heavy-bedded, medium grained to coarse, quarried at Pocahontas, Virginia	25 to 55	3475	
Coal, No. 3 Pocahontas "Rider", not mined	2 to 0	3475	
Shale, dark, with plant fossils abundant, and **fresh or brackish water fossils** reported on Piney in Raleigh County	0 to 10	3485	
Coal, No. 3 Pocahontas, multiple-bedded, soft, columnar, mined extensively in Wyoming, McDowell, and Mercer Counties	0 to 15	3500	85′

	Thickness. Feet.	Total. Feet.	
Shale, gray and sandy	0 to 10	3510	
Sandstone, Lower Pocahontas, generally massive, medium grained, when shaly often carries 18″ to 24″ of **slaty coal (No. 2 "A" Pocahontas)** near middle..	0 to 50	3560	
Shale, gray and sandy	0 to 8	3568	
Coal, No. 2 Pocahontas, multiple-bedded, soft, columnar, not mined in State....	0 to 2	3570	70′
Shale, gray	0 to 5	3575	
Sandstone, Vivian, massive, bluish gray, medium grained, lenticular, quarried at East Vivian, McDowell County.....	0 to 29	3604	
Coal, No. 1 Pocahontas, generally single-bedded, soft, columnar, not mined in State	0 to 1	3605	35′
Sandstone, Landgraff, massive, buff, medium grained, micaceous, quarried at Landgraff, McDowell County.....	0 to 20	3625	
Coal, Landgraff, soft, columnar	0 to 1	3626	21′
Sandstone, Keystone, massive, buff, medium grained, micaceous, making cliff 8 to 10 feet above N. & W. Ry. grade at Keystone Station, McDowell County	0 to 23	3649	
Coal, Keystone, impure, cropping at Keystone Station	0 to 1	3650	24′
Shale and sandstone	10 to 15	3665	
Shale, North Fork, black, with thin lenses —1″ to 2″—of iron ore and **fresh or brackish water fossils,** crops flush with N. & W. Ry grade at North Fork Station, McDowell County, and in N. & W. Ry. grade at Matoaka	5 to 10	3675	
Coal, Simmons, soft, columnar, cropping in public road just northwest of Simmons Station, Mercer County	0 to 1	3676	26′
Shale and sandstone, alternating	0 to 122	3798	
Coal, Squire Jim, multiple-bedded, soft, columnar, observed only in southeastern McDowell County, near Squire Jim P. O.	0 to 2	3800	124′
Shale and sandstone to top of the Mississippian Rocks, or Red Shale of Mauch Chunk	0 to 50	3850	50′

"The great thickness (3850 feet) of Pottsville rocks, as revealed in the above general section, is in marked contrast to that—250 to 350 feet—in the northern edge of the State. The rapid expansion of these beds both southwestward and southeastward from the Kanawha River has made it a very difficult matter to correlate accurately the several contained coals as also the many sandstones and marine fossil horizons. This difficulty is further enhanced by the fact that the intermediate region between the latter river and the Kentucky and Virginia border along the waters of Tug Fork is largely forested. Hence the foregoing section is subject to revision in minor details as regards the smaller and undeveloped coal beds. This is

specially true in that portion of the rock column intervening between the Beckley and No. 3 Pocahontas seams where deposition was very irregular even for the Pottsville Measures." *

DESCRIPTION OF THE POTTSVILLE FORMATIONS, KANAWHA GROUP.

The several formations of the Kanawha Group will now be described in detail.

THE HOMEWOOD SANDSTONE.

This sandstone crowns the top of the Kanawha Group, and appears in Raleigh County, on Kayford, Coal River and Cherry Pond Mountains, forming some rugged cliffs. It has lost its massiveness and is not conglomeratic in this area, as may be seen in the sections of same, as described in this Report.

Underneath the Homewood Sandstone, there usually occur shales, from 1 to 20 feet in thickness, mostly sandy, and often containing bituminous slate and thin layers of coal, but the coal is thin, impure and of little commercial importance.

THE KANAWHA BLACK FLINT.

From 1 to 20 feet underneath the Homewood Sandstone, there occurs on Kanawha and Elk Rivers, the Kanawha Black Flint, from one to eight feet thick. This stratum disappears in Raleigh County and its horizon is represented by soft shale, often containing marine fossils. A number of these fossils have been found in the roof shales of the Stockton Coal, at the Ohley Mine of the Cabin Creek Consolidated Coal Company, at Ohley, about seven miles north of the Raleigh-Fayette County Line.

THE STOCKTON-LEWISTON COAL.

From 0 to 20 feet under the Homewood Sandstone, there occurs a multiple-bedded splint coal of widely extended dis-

* Ray V. Hennen, Wyoming-McDowell Report. W. Va. Geol. Survey, p. 60; 1915.

tribution known as the Stockton-Lewiston bed. This seam is very persistent, being nearly always present wherever the Kanawha Group has any considerable development. It occurs in Clear Fork and Marsh Fork Districts, in the top of Kayford, Coal River and Cherry Pond Mountains, near the summits of same, but has not attained its usual development in this area.

THE UPPER COALBURG SANDSTONE

From 5 to 15 feet under the Stockton-Lewiston Coal, there occurs a massive, gray, medium grained sandstone, 50 to 90 feet thick, which often weathers into "chimney rock" columns on the summits. This is the **Upper Coalburg Sandstone,** and it occurs in Marsh Fork and Clear Fork Districts of Raleigh County, near the summits of Cherry Pond, Coal River and Kayford Mountains, as is shown in sections given in a previous Chapter of this volume, to which the reader is referred.

THE COALBURG COAL.

From 5 to 10 feet under the Upper Coalburg Sandstone, there occurs a multiple-bedded splinty coal that Dr. I. C. White designated the **Coalburg** from the town in Kanawha County where it was first mined, and in Volume II(A), pages 446-447, W. Va. Geological Survey, 1908, he describes it as follows:

"It was first mined on a commercial scale high up in the steep hills which overlook the town of Coalburg, Kanawha County, and hence has received its designation from that place. In fact, it was probably through the mining operations of the **Coalburg Seam** that the character and reputation of the **splint coals** of the Kanawha Series was first firmly established in the commercial markets of the country.

"The character of the coal in the **Coalburg Seam,** as well as the structure of the bed itself, very much resembles that of the **Winifrede bed.** Like the latter, it contains much **splint** coal as well as alternating layers of softer or 'gas' coal, and also one or more partings of shale, so that it is multiple-bedded. Occasionally one of the layers of shale will thicken up into several feet of rock material, thus splitting the seam into two well-defined coal beds, just as happens with the **Winifrede Coal** below.

"It is a curious fact that although occupying different stratigraphic horizons, these two coal beds, the **Winifrede** and **Coalburg,** seldom or never attain commercial value at the same locality, so that the writer can not recall a single example where the two beds are now mined in the same hill, since it appears to be universally true, that where one of these beds is valuable, the other is either too thin for present mining

PLATE XV.—Beckley Coal outcrop at Lynwinn.

operations, or is so impure as not to be marketable under present mining conditions. These facts appeared to the writer so difficult of explanation when he first began the study of the Kanawha Series in 1884 that sometimes the suspicion would arise that possibly the **Coalburg** and **Winifrede beds** were after all one and the same, and that the intervals separating the coal from other well known geologic horizons, like the **Kanawha Black Flint** above, might vary so much in thickness at the different localities, as to give rise to the conclusion that there are two seams of coal instead of one. There is so much stratigraphic evidence, however, that tends to prove that these two coal horizons are separate and distinct, that until some positive evidence to the contrary arises, the conclusion that they are separate and distinct coal beds must be accepted.

"Owing to this intimate resemblance and greatly varying intervals, it is possible and indeed quite probable that some of the mines described as in the **Coalburg bed** should have been classified as **Winifrede** and **vice versa.**"

The horizon of this seam occurs in Marsh Fork and Clear Fork Districts of Raleigh County, and has been prospected for in these districts, but was found to be so broken up with parting slates as to be of very little commercial value.

The Little Coalburg Coal, belonging from 0 to 20 feet under the Coalburg Coal, was not observed in the area embraced in this Report.

THE LOWER COALBURG SANDSTONE.

From 0 to 20 feet under the horizon of the Little Coalburg Coal, there occurs a massive, medium grained sandstone, 20 to 40 feet in thickness, which has been named the **Lower Coalburg.** This sandstone frequently occurs in cliff form around the hills along Marsh Fork and along Clear Fork and its tributaries in Raleigh County.

THE BUFFALO CREEK COAL.

The Buffalo Creek Coal of Hennen in Mingo County was not definitely identified in Raleigh, and if present and separate from the Winifrede bed, it does not occur in Raleigh County of commercial thickness and purity. The thickness of what is supposed to represent this stratum is given in sections of the Kanawha Group published in this Report to which the reader is referred.

The Buffalo Creek Limestone was not observed in this area.

THE UPPER WINIFREDE SANDSTONE.

Overlying the Winifrede Coal, there occurs a massive, medium grained, yellowish gray sandstone, ranging in thickness from 20 to 50 feet, often forming "chimney rock columns" on the summits and large cliffs around the hills along Clear and Marsh Forks of Coal River.

I. C. White has the following to say in regard to this bed in Volume II(A), page 446, W. Va. Geological Survey, 1908:

"Overlying the celebrated **Winifrede Coal** and generally in direct contact with the same, occurs a massive brownish gray sandstone, fine-grained below, but usually coarser above. The lower surface of this sandstone, unlike that of most sandstones which form the immediate roofs of coal beds, is usually of remarkable regularity, and does not cut down into the underlying coal, but forms a roof almost as regular and even as a covering of slate or hard shale. This sandstone is generally of a bluish-gray cast, coarse in its upper portion, and usually has much less mica in its composition than the dull gray sandstones of the Malden series below."

No quarries were observed in this sandstone but it would make a good building stone. For sections showing its thickness, the reader is referred to a previous Chapter of this Report.

THE WINIFREDE (DOROTHY) COAL.

From 0 to 3 feet under the Upper Winifrede Sandstone, there occurs a multiple-bedded, splinty coal, designated the **Winifrede** by I. C. White from a town of that name on Fields Creek, Kanawha County, where it was first mined and where the following type section was measured, as published in the Kanawha County Report of the Survey, page 273:

Section of Winifrede Coal, Winifrede, Cabin Creek District, Kanawha County.

			Ft.	In.
Sandstone, massive, roof.....				
Coal, hard, splint.....	0′	10″		
Coal, gray.....	0	4		
Coal, hard, splint.....	1	6	.....	4 10
Slate, gray.....	0	6		
Coal, hard, block (to slate floor)	1	8		

A section taken in the mine at Dorothy, where this seam is being mined commercially, follows:

			Ft.	In.
Slate roof				
Coal, splint	1′	6″		
Shale, slaty	0	1		
Coal, splint	4	0		
Slate	0	1		
Coal	0	4	10	0
Slate	0	1		
Coal, splint	1	6		
Slate	0	4		
Coal, gas, blocky	2	1		

The Winifrede Coal is mined commercially at but four points in Raleigh County, Dorothy, Sarita, Emerson and Clear Fork, but has been prospected over a large portion of Marsh Fork and Clear Fork Districts, sections of which, together with the thickness, composition and fuel values at these mines, as also at a few prospect openings, are given at length in Chapter VIII along with an estimate of available area and tonnage by magisterial districts. The detailed crop of the Winifrede Coal is shown by appropriate symbol on Map II.

THE LOWER WINIFREDE COAL.

From 6 to 50 feet under the Winifrede Coal, there often occurs in Raleigh County a multiple-bedded slaty coal that has been named the **Lower Winifrede.** It is not mined commercially in Raleigh County, since it has a thickness of only 0 to 2 feet.

THE LOWER WINIFREDE SANDSTONE.

At 2 to 5 feet under the Lower Winifrede Coal, there occurs a grayish white and brown, hard, massive sandstone, designated the **Lower Winifrede Sandstone** by I. C. White. This sandstone ranges in thickness from 30 to 70 feet as is shown in the general sections of the Kanawha Group, in a preceding Chapter, to which the reader is referred for further data.

THE CHILTON "A" COAL.

From one to two feet below the Lower Winifrede Sandstone, there occurs a multiple-bedded coal, known as the **Chilton "A" Coal** from its association with the underlying Chilton seam. This seam, as far as observed by the writer, is of no commercial value within the area studied in this Report.

THE UPPER CHILTON SANDSTONE.

From 10 to 18 feet below the Chilton "A" Coal, there occurs a massive, medium grained, grayish sandstone, from 20 to 50 feet thick, called the **Upper Chilton.** This sandstone usually rests upon the Chilton "Rider" Coal, but occasionally thickens up and cuts out this thin seam of coal and extends down to the **Chilton Coal** proper. Its thickness and occurrence may be observed in the general sections of the Kanawha Group in a previous Chapter to which the reader is referred. It forms massive cliffs and steep bluffs around the hillsides, along Marsh Fork and Clear Fork Creeks. No quarries were observed in this bed, but in other sections of the State where it has been used for foundations, it forms an excellent building stone.

THE CHILTON "RIDER" COAL.

Directly under the Upper Chilton Sandstone and from 10 to 30 feet over the Chilton Coal, there frequently occurs a splinty multiple-bedded seam of coal from 0 to 4 feet thick, known as the **Chilton "Rider" Coal** from its close association with the Chilton Coal.

THE INDIAN GAP—WINIFREDE LIMESTONE.

From 5 to 10 feet under the Chilton "Rider" Coal, there occurs in Raleigh a dark gray, hard, fossiliferous (marine) limestone from one to two feet thick with from one to five feet of fossiliferous limy shale directly over it. It is possibly identical with the **Winifrede Limestone,** occurring at the town of that name in Kanawha County about 65 feet below the Winifrede Coal.

THE CHILTON COAL.

At 30 to 160 feet under the Winifrede Coal, there occurs a splinty, multiple-bedded coal, named the **Chilton** by Dr. I. C. White, from the village of Chilton on Davis Creek in Kanawha County. This seam is of no economic importance at its type locality, but is a valuable seam commercially in southwestern Boone and over a large area in Mingo and Logan Counties. It has been mined extensively in southwestern Boone and northern Logan Counties, under the erroneous **name of the No. 2 Gas** seam. In the study of Raleigh County, this seam was found to be badly split as far as prospected, but it has some commercial value.

The following section of this bed was measured by Krebs, which shows its general character and structure:

Rowland Land Company Opening—No. 136 on Map II.

On south side of Little Marsh Fork, 2 miles southeast of Emerson; **Chilton Coal**; butts, N. 70° E.; faces, N. 20° W.; elevation, 1740′ L.

			Ft.	In.
Slate roof				
Coal, splint	2′	2″		
Slate, dark	0	1	3	9
Coal (to slate floor)	1	6		

The coal is 150 feet under the Winifrede bed at this point.

THE LOWER CHILTON SANDSTONE.

At 0 to 5 feet under the Chilton Coal, there occurs a bluish gray, medium grained, micaceous sandstone, ranging in thickness from 0 to 30 feet, known as the **Lower Chilton Sandstone.** It often makes cliffs, steep bluffs and distinctly marked benches in the topography around the hillsides. No quarries were observed on this stratum.

THE LITTLE CHILTON COAL.

A thin impure seam of coal, 18 to 20 inches in thickness, a "split" off the Chilton seam, sometimes occurs at 0 to 5 feet under the Lower Chilton Sandstone and this has been named

the **Little Chilton Coal**, on account of its close association with the Chilton seam at 0 to 30 feet below same. It was not found of sufficient thickness and purity to make it of any economic importance at present in the area of this Report.

THE HERNSHAW SANDSTONE.

At 0 to 30 feet under the Chilton Coal and directly under the Little Chilton Coal, when the latter is present, there occurs a massive, medium grained, micaceous, grayish brown sandstone, designated the **Hernshaw Sandstone** from its association with the underlying coal. It ranges in thickness from 20 to 85 feet as is shown in the section 0.5 mile west from Emerson on page 101 of this Report. This is an unusual thickness since it rarely exceeds 40 feet. Its thickness, character and relative position in the rock column are shown in the general sections, Chapter VI.

THE HERNSHAW COAL.

For a number of years there has been mined a coal on Lens Creek, Kanawha County, at about 120 feet above the Cedar Grove Coal, often correlated the Winifrede, but locally known as the "Black Band" seam. In a section taken at Hernshaw, this seam proves to be 175 feet below the true Winifrede and has therefore been named the **Hernshaw** from a town near which it is mined commercially, having a thickness of 3 to 4 feet. In Raleigh County, this seam attains a maximum thickness of only two feet of good splint coal, though it has not been prospected very extensively, and hence is not of any present commercial value. For its position in the rock column, the **reader is referred to the** general sections in Chapter VI, and for the character and area of this coal, to the Chapter on Coal.

THE NAUGATUCK SANDSTONE.

In the interval between the Hernshaw and the Dingess Coal seams, there occurs a massive, grayish white, medium grained sandstone, designated by Hennen and Reger the **Naugatuck**, from its occurrence in a massive cliff at Nauga-

tuck, Mingo County. It ranges in thickness from 15 to 25 feet. For further information in regard to this sandstone, the reader is referred to the general sections of Marsh Fork and Clear Fork Districts, Raleigh County, in Chapter VI.

THE DINGESS COAL.

At 0 to 3 feet below the Naugatuck Sandstone, a multiple-bedded, gas coal occurs that attains commercial thickness and purity in at least a small portion of Marsh Fork and Clear Fork Districts of Raleigh County, as is shown in the Dorothy Section, page 51, where it measures 2 feet 9 inches. It was named by Hennen and Reger from its occurrence at Dingess, Mingo County, where it was first mined commercially. For its stratigraphic position and thickness, the reader is referred to the general sections of Marsh Fork and Clear Fork Districts of Raleigh County.

THE WILLIAMSON SANDSTONE.

At 0 to 5 feet below the Dingess Coal in the interval between the Dingess Coal and the Dingess Limestone, there occurs a massive, medium grained, gray, micaceous sandstone, ranging in thickness from 5 to 20 feet, named the **Williamson** by Hennen and Reger from its fine exposure at Williamson, Mingo County. For further information in regard to this sandstone, the reader is referred to the general sections of Clear Fork and Marsh Fork Districts of Raleigh County. No quarries were observed on this bed in the area.

THE DINGESS LIMESTONE.

From 1 to 5 feet below the Williamson Sandstone and from 0 to 25 feet above the Williamson Coal, there occurs a hard, gray, frequently brown and silicious, lenticular, ferriferous limestone, that is widely persistent in Boone, Mingo and Logan Counties, and the northwestern portion of Raleigh County, ranging in thickness from 1 to 2 feet. It is easily traced over the above named area on account of its profusion of marine fossils. It was designated the **Dingess Limestone**

by Reger from a town of that name in Mingo County. Its detailed crop is outlined by appropriate symbol on Map II accompanying this Report. Owing to its thinness, impurity, and irregularity, it is of no economic importance except to fertilize the land at its immediate crop.

The Williamson Coal belongs directly under the Dingess Limestone, but it was not observed in this area, nothing but a dark shale with coal streaks being observed at this horizon.

THE SETH LIMESTONE.

At 15 to 20 feet under the Williamson Coal and 35 to 40 feet under the Dingess Limestone, there occurs at Seth, Boone County, an impure, fossiliferous limestone about 12 to 18 inches thick, which has been designated the **Seth Limestone** from the town of Seth at which it was first discovered. Nothing but an impure, limy, fossiliferous shale appears at this horizon in this area, which is about 60 to 80 feet under the Dingess Limestone, as is shown by the general section at Dorothy and other general sections in Marsh Fork and Clear Fork Districts of Raleigh County.

THE UPPER CEDAR GROVE SANDSTONE.

At 10 to 25 feet below the Williamson Coal, and 10 to 20 feet above the Cedar Grove Coal, there occurs a massive, gray, medium grained sandstone ranging in thickness from 10 to 35 feet. It has been designated the **Upper Cedar Grove Sandstone,** from its association with the Cedar Grove Coal. Its thickness and character may be studied in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County, to which the reader is referred.

THE CEDAR GROVE COAL.

At 10 to 20 feet under the Upper Cedar Grove Sandstone and about 125 to 150 feet above the Campbell Creek (No. 2 Gas) Coal, there occurs a double-bedded, block coal, that is an excellent commercial coal at its type locality, Cedar Grove, Kanawha County, from which town it takes its

name; but in the area under discussion, it is not of much importance so far as revealed by prospecting to date, yet it attains a thickness of about 2 to 3 feet over a portion of Marsh Fork and Clear Fork Districts of Raleigh County. This is the same bed as the "Island Creek" and "Red Jacket" seams of Fayette and Mingo Counties. For further information in regard to its position in the rock column and character, the reader is referred to the general and coal sections of this volume. The following is a type section of the Cedar Grove Coal on the Kanawha River:

Monarch Section of the Cedar Grove Coal.

		Inches.
1.	Sandstone	
2.	**Coal,** 0" to	3
3.	Slate, 2" to	8
4.	**Coal,** hard, 1" to	4
5.	**Coal,** very hard, block, 1" to	10
6.	Slate floor	

It appears that the 2 to 8 inches of slate at Monarch has developed into a massive, gray sandstone dividing the Cedar Grove Coal into two separate and distinct seams that are designated the Cedar Grove and Lower Cedar Grove seams, divided by the Middle Cedar Grove Sandstone described below.

THE MIDDLE CEDAR GROVE SANDSTONE.

At 0 to 5 feet below the Cedar Grove Coal, there occurs a massive, gray sandstone, 0 to 50 feet thick, which has been designated the **Middle Cedar Grove Sandstone,** on account of its association with the Cedar Grove Coal, and in contradistinction from the Upper and Lower Cedar Grove Sandstones. These same sandstones in this area are generally replaced by sandy shales.

THE LOWER CEDAR GROVE COAL.

As mentioned above under the discussion of the Cedar Grove Coal, the lower and better portion of the type section represents the Lower Cedar Grove seam while the upper section above the slate represents the Upper Cedar Grove seam

and that the Upper Cedar Grove seam is the better of the two in this area, the lower bench having been partly replaced by a dark shale. This seam appears not to be very persistent in this area, as is shown by the general sections of Marsh Fork District of Raleigh County.

THE LOWER CEDAR GROVE SANDSTONE.

At 1 to 5 feet below the Lower Cedar Grove Coal, there occurs a massive sandstone, occasionally replaced by sandy shale, that has been designated the Lower Cedar Grove Sandstone on account of its association with the Cedar Grove Coal. It ranges in thickness from 20 to 35 feet. No quarries were observed in either of the Cedar Grove Sandstones.

The Alma "A" Coal, of Hennen and Reger, in the Logan-Mingo Report, coming about 5 to 15 feet above the Alma Coal, was not observed in this area.

THE ALMA COAL.

The next seam in the area under discussion, below the Lower Cedar Grove Coal, is a multiple-bedded, splinty coal that has been designated the Alma by Dr. White. This seam occurs at about 80 to 115 feet above the Campbell Creek (No. 2 Gas) Coal and is the same bed as the Draper seam of Logan County. Its thickness, character and stratigraphic position in the rock column are exhibited in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County in this volume.

THE MONITOR ("LOGAN") SANDSTONE.

At 0 to 5 feet below the last named coal, there occurs a massive, bluish gray sandstone that forms cliffs and bluffs around the hills along Clear and Marsh Forks of Coal River, and ranges in thickness from 20 to 40 feet, and it was designated the **Logan Sandstone** by Hennen and Reger in the Logan-Mingo Report, but has since been renamed the "**Monitor" Sandstone** by Hennen in the Wyoming-McDowell County Report, to avoid duplication of names. For thick-

ness and position in the rock column, the reader is referred to the general sections of Marsh Fork and Clear Fork Districts of Raleigh County of this volume.

THE LITTLE ALMA COAL.

At 1 to 5 feet below the Monitor ("Logan") Sandstone and 40 to 60 feet above the Campbell Creek (No. 2 Gas) Coal, there occurs a multiple-bedded, impure coal that has been designated the **Little Alma** from its association with the Alma Coal.

THE PEERLESS SANDSTONE.

A massive, gray sandstone, ranging in thickness from 15 to 25 feet, occurs at 0 to 5 feet under the Little Alma Coal and one to five feet above the Campbell Creek Limestone, has been designated the **Peerless Sandstone** from its association with the Peerless Coal of the Kanawha Valley. The Peerless Coal seems to be replaced by a dark interlaminated dove-colored shale in a portion of this area. No quarries were observed in this sandstone.

THE CAMPBELL CREEK LIMESTONE.

At an interval of from 10 to 40 feet above the Campbell Creek (No. 2 Gas) Coal, there frequently is found an impure, bluish gray, lenticular, silicious limestone 12 to 18 inches thick, often exhibiting a "cone-in-cone" structure, containing marine fossils at Kayford, Kanawha County, and designated the **Campbell Creek Limestone** by I. C. White, from its occurrence near the mouth of Campbell Creek, Kanawha County.

THE CAMPBELL CREEK (NO. 2 GAS) COAL.

At 10 to 40 feet under the Campbell Creek Limestone and about 500 to 560 feet under the Winifrede (Dorothy) Coal, there occurs a multiple-bedded gas coal, designated by I. C. White the **Campbell Creek (No. 2 Gas) Coal** from a creek of that name in Kanawha County. This bed splits up and becomes two separate and distinct seams, separated by from 20 to 35 feet of shale and sandstone, in the northwestern portion

of the area under discussion, and designated the "Upper" and "Lower" Benches when found in this condition. This seam has been prospected in Marsh Fork and Clear Fork Districts of Raleigh County and found of commercial thickness and purity, under a large area of these districts as is demonstrated in the general and coal sections of this volume. The thickness, composition and fuel value of each bench of the Campbell Creek (No. 2 Gas) Coal at the prospect openings, along with estimates of its minable area and tonnage by magisterial districts, are given on subsequent pages in Chapter VIII, also its detailed crop line is outlined on Map II, accompanying this Report.

THE BROWNSTOWN SANDSTONE.

The Brownstown Sandstone of I. C. White, Volume II, W. Va. Geological Survey, page 586, belongs immediately below the Campbell Creek (No. 2 Gas) Coal, and ranges in thickness from 25 to 50 feet. This sandstone forms cliffs and bluffs along Clear and Marsh Forks of Coal River in northwestern Raleigh County. Detailed sections of this sandstone are given in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County, on preceding pages of this Report.

THE POWELLTON "A" COAL.

Immediately under the Brownstown Sandstone and from 10 to 20 feet above the Powellton Coal, a double-bedded seam of coal occurs, from 0 to 2 feet thick, that has been designated the **Powellton "A" Coal** from its association with the Powellton Coal, but it was not found of minable thickness in the area under discussion in this Report.

THE POWELLTON COAL.

From 50 to 75 feet below the Campbell Creek (No. 2 Gas) Coal, a double bedded coal appears that has been designated the **Powellton Coal** by I. C. White, from a town of that name in Fayette County, where it was first mined. This seam was not found of sufficient thickness and purity in the area under

discussion to make it of present commercial value. For its thickness and position in the rock column, the reader is referred to the general and coal sections of this volume in Marsh Fork and Clear Fork Districts of Raleigh County.

THE STOCKTON LIMESTONE.

At 90 to 125 feet below the Campbell Creek (No. 2 Gas) Coal and 25 to 85 feet above the Eagle Coal, there occurs a dark gray silicious lenticular limestone, frequently exhibiting the "cone-in-cone" structure, that has been designated the **Stockton** from the name of the gentleman who used to manufacture it into cement at Cannelton, Kanawha County. In Raleigh County this bed appears about one foot thick and impure.

THE MATEWAN COAL.

At 120 to 140 feet below the Campbell Creek (No. 2 Gas) Coal, or a little below midway between the Campbell Creek (No. 2 Gas) and Eagle seams, there occurs a multiple-bedded coal that has been designated the **Matewan** by Hennen and Reger in the Logan-Mingo Report. This seam (from what little prospecting has been done for it), appears to be of commercial thickness and purity over a considerable area of Marsh Fork and Clear Fork Districts of Raleigh County. Its thickness and stratigraphic position are exhibited in the general and coal sections of this volume.

THE MATEWAN SANDSTONE.

Directly underlying the above described coal, there occurs a massive, gray, micaceous sandstone, varying in thickness from 20 to 40 feet, that has been designated the **Matewan** from its association with the Matewan Coal. This sandstone makes prominent cliffs and steep bluffs at places along Clear and Marsh Forks of Coal River. No quarries were observed in this ledge.

THE EAGLE "A" COAL.

Immediately underlying the Matewan Sandstone, there frequently occurs a thin unimportant coal bed from 0 to 2 feet thick that has been designated the **Eagle "A" Coal** from its association with the Eagle Coal about 25 to 50 feet below. For its thickness and stratigraphic position see the general and coal sections of this volume for Marsh Fork and Clear Fork Districts.

THE EAGLE SANDSTONE.

The interval between the Eagle "A" and the Eagle Coal is generally occupied by a bluish gray, massive, micaceous, medium grained sandstone that has been designated the **Eagle Sandstone** from its association with the Eagle Coal. This sandstone ranges in thickness from 20 to 50 feet. It is frequently broken up into dark grayish layers of shale with iron ore nodules. From 5 to 10 feet of dark, sandy shale and slate, the bottom 2 to 6 feet being a dark hard slate, filled to profusion at places with marine fossils, occupies the space between the Eagle Sandstone and the Eagle Coal.

THE EAGLE COAL.

The Eagle Coal, one of the most important in northwestern Raleigh County, designated so by I. C. White from its first being mined commercially at a town of that name on the Kanawha River, just above Montgomery, is a double-bedded gas coal, of commercial thickness and purity, underlying a large area in Marsh Fork and Clear Fork Districts of Raleigh County, as is demonstrated by prospecting done by the Rowland Land Company and others. This is the same seam as the "Middle War Eagle" of Turkey Creek and the "Herberton" seam of Herberton, Fayette County. The thickness, composition, and fuel value at the numerous prospect openings in northwestern Raleigh County, along with an estimate of the available area and tonnage by magisterial districts, are given on subsequent pages in the Chapter on Coal. Also, its detailed crop is shown by an appropriate symbol on Map II,

accompanying this Report, while the green structure contours are based on this seam of coal.

Neither the **Bens Creek Sandstone,** nor the **Bens Creek Coal** of Hennen and Reger, found along Bens Creek and Turkey Creek in Mingo County, was observed in this area.

THE DECOTA SANDSTONE.

From 5 to 10 feet below the Eagle Coal in this area, there occurs a medium grained, massive, gray, micaceous sandstone, ranging in thickness from 30 to 50 feet, that has been designated the **Decota Sandstone,** from a mining village of that name in Kanawha County. Its character and position in the rock column are exhibited in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County in this volume.

THE LITTLE EAGLE COAL.

From 5 to 10 feet under the Decota Sandstone, there appears another small seam of double-bedded, gas, columnar coal, that has been designated by I. C. White the **Little Eagle** from its association with the Eagle Coal. Its thickness, composition and fuel value at numerous prospect openings in northwestern Raleigh County, along with an estimate of the available area and tonnage by magisterial districts, are given on subsequent pages in the Chapter on Coal. A large portion of Marsh Fork and Clear Fork Districts of Raleigh County is underlain with this seam.

THE CEDAR COAL.

At 15 to 40 feet below the coal last described, there frequently occurs a double-bedded, gas coal that has been designated the **Cedar** from a town of that name in Mingo County. It is possibly a "split" off the Little Eagle.

THE GRAPEVINE SANDSTONE.

Immediately underlying the Cedar Coal, there occurs a massive, grayish white, micaceous, medium grained sandstone,

that has been designated the Grapevine from its occurrence on a creek of that name in Mingo County. Its thickness and relative position in the rock column are exhibited in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County.

THE EAGLE LIMESTONE AND SHALE.

At 50 to 75 feet below the Little Eagle Coal, there occurs an impure, dark, fossiliferous, "cone-in-cone" limestone and shale, ranging in thickness from 15 to 25 feet, and designated the **Eagle Limestone** by I. C. White. Its thickness and stratigraphic position are exhibited in the general sections of Marsh Fork and Clear Fork Districts of Raleigh County.

THE LITTLE CEDAR COAL.

At the base of the last formation above described, and about 150 to 170 feet below the Eagle Coal, there occurs an impure, unimportant seam of gas coal from 0 to 1 foot in thickness that has been designated the **Little Cedar Coal.** Its thickness and relative position in the rock column are exhibited in the general sections of Chapters IV and VI of this volume.

THE LOWER WAR EAGLE SANDSTONE.

A massive, grayish, medium grained sandstone is the next stratum of note below the Little Cedar Coal, and is designated the **Lower War Eagle** from its association with the coal of that name.

THE LOWER WAR EAGLE COAL.

The **Lower War Eagle Coal** appears to be of commercial thickness and purity, as revealed by prospect and farm openings in the southwestern portion of both Marsh Fork and Clear Fork Districts. It was designated from a town in Mingo County, where it comes almost directly under the Lower War Eagle Sandstone. Its crop is outlined in detail on Map II and

its thickness, structure and fuel value at the several prospect and country openings, along with approximate minable area and tonnage, are given on subsequent pages of this volume.

THE UPPER GILBERT SANDSTONE.

At 0 to 3 feet below the Lower War Eagle Coal, there appears a massive, grayish white, medium grained sandstone, that has been designated the **Upper Gilbert Sandstone**, from its close association with the Gilbert Coal. It is usually a hard, medium grained, current bedded sandstone, and forms abrupt cliffs along upper Marsh Fork and Clear Fork.

THE DOROTHY LIMESTONE AND SHALE.

Just below the last described stratum, there appears a dark, shaly, fossiliferous limestone, ranging in thickness from one to two feet, that has been designated the **Dorothy Limestone and Shale** from a town of that name in Raleigh County where they were first studied. It is possible these beds may correlate with Hennen's **Oceana Limestone and Shale** of Wyoming and McDowell Counties. The thickness and stratigraphic position are exhibited in the Dorothy Section of this volume.

THE GLENALUM TUNNEL COAL.

At 5 to 15 feet below the last described formation, there occurs a multiple bedded seam, much split up with slate partings, that has been designated the **Glenalum Tunnel Coal** from a tunnel of that name in Mingo County. Its thickness and stratigraphic position are exhibited in the general sections of Marsh Fork District, Raleigh County.

THE LOWER GILBERT SANDSTONE.

Directly under the Glenalum Tunnel Coal and about 20 to 30 feet below the Upper Gilbert Sandstone, there appears a massive, grayish white, hard sandstone, that makes massive cliffs and bluffs around the hills along Marsh and Clear Forks of Coal River. It has been designated the **Lower Gilbert Sand-**

stone from a town of that name in Mingo County. Its thickness and stratigraphic position are exhibited in the general sections of Clear Fork and Marsh Fork Districts of Raleigh County.

THE GILBERT COAL.

At 0 to 5 feet below the last described sandstone, there appears a double bedded, gas, soft, columnar coal that has been designated the **Gilbert Coal** from a town of that name in Mingo County. It is also probably identical with the "Kidd" seam at Herberton, where it is mined for local fuel, and where Krebs reports the following section:

			Ft.	In.
Shale, dark gray				
Coal, gas	1′	0″		
Bone	0	1		
Coal, gas	1	3		
Coal, impure	0	1	4	5
Coal, gas	0	6		
Slate	1	0		
Coal, gas (to fire clay floor)	0	6		

Its thickness and stratigraphic position are exhibited in the general sections of southeastern Marsh Fork and Clear Fork Districts of Raleigh County. Its crop is outlined in detail on Map II.

THE NEW RIVER GROUP.

THE NUTTALL SANDSTONE.

The Nuttall Sandstone makes the top of the New River Group, and is a current bedded, medium grained, and often pebbly sandstone, and was named by I. C. White in honor of John Nuttall, one of the pioneers in the mining of New River Coals at Nuttallburg, Fayette County, where it forms large cliffs, 75 to 100 feet thick, along New River, from Hawks Nest to Sewell. In Raleigh County, this sandstone forms cliffs along Paint Creek and tributaries and along Marsh Fork near Dry Creek where the stream cuts into the ledge and at Danners on Sandlick Creek. Measurements of this sandstone are given in sections and records of core test holes already published in preceding pages of this Report.

THE DOUGLAS "A" COAL.

Underneath the Nuttall Sandstone there often occurs a soft, slaty coal from 1″ to 12″ thick, that has been designated the **"Douglas "A" Coal** by Hennen.

THE DOUGLAS COAL.

From 10 to 50 feet under the Nuttall Sandstone, there occurs a single bedded gas coal bed that has been named the **Douglas Coal** by Hennen from Douglas Station, McDowell County, where it is named. In Raleigh County this coal is from 12″ to 24″ thick, and is a soft columnar coal.

THE LOWER NUTTALL SANDSTONE.

From 20 to 60 feet under the Nuttall Sandstone, there occurs a heavy current-bedded, grayish white, coarse grained, frequently conglomeratic sandstone, from 50 to 100 feet thick, that has been called the **Lower Nuttall Sandstone.** In Raleigh County this ledge forms cliffs along Paint Creek and its tributaries. Along Marsh Fork and its tributaries this sandstone is usually soft and no massive cliffs were observed. It is probably a "split" off the Nuttall Sandstone.

THE DOUGLAS SHALE.

Underneath the Lower Nuttall Sandstone, there occurs a dark sandy shale, one to ten feet thick, that often contains small marine fossils at base. These fossils were observed in the western part of Raleigh County near Bolt.

THE LOWER DOUGLAS COAL.

From 1 to 15 feet under the Lower Nuttall Sandstone, occurs a thin multiple bedded, soft gas, columnar coal from 6 to 12 inches thick. This bed is not mined commercially in the State.

THE PANTHER SANDSTONE.

Underneath the Lower Douglas Coal from 1 to 50 feet, there occurs a current bedded grayish white, massive sandstone, from 40 to 50 feet in thickness, which has been named the **Panther Sandstone** from a station of that name in McDowell County. In Raleigh-Mercer-Summers area, this sandstone is soft and friable where exposed and no large cliffs are formed by same.

THE IAEGER "B" COAL.

From 0 to 10 feet under the Panther Sandstone there often occurs a thin multiple bedded soft gas coal, from 0 to 2 feet thick. This coal is nearly always absent in Raleigh County.

THE UPPER IAEGER SANDSTONE.

Underneath the Iaeger "B" Coal and separated from it by a thin layer of slate, from 0 to 2 feet in thickness, there occurs a massive, medium grained, gray, brownish sandstone, from 20 to 40 feet thick, which from its exposure in McDowell County, has been named the Upper Iaeger Sandstone. This sandstone forms brownish cliffs and in Raleigh County is often soft and friable.

THE IAEGER "A" COAL.

Underneath the Upper Iaeger Sandstone, there often occurs a slaty, impure coal that has been called the **Iaeger "A" Coal.** This coal is separated from the **Iaeger Coal** proper by a dark argillaceous shale **(Iaeger),** from 5 to 30 feet thick, with plant fossils at base.

THE IAEGER COAL.

The next bed of coal in descending order is the **Iaeger Coal,** named by I. C. White from a town of that name in McDowell County. This seam is from 0 to 5 feet in thickness and is a double-bedded, soft, columnar coal. The following section, measured on the Virginian Railroad grade at Sweeneyburg, gives its general structure:

	Thickness. Ft.	In.	Total. Ft.	In.
Sandstone, massive, brownish, **Upper Iaeger**				
Shale, dark	5	0	5	0
Coal, gas, impure 1′ 0″				
Slate 0 1 } **Iaeger.**	2	1	7	1
Coal, gas, harder 1 0 } (1870′ B.)				
Shale, dark	0	3	7	4
Sandstone, **Middle Iaeger**, to railroad.	14	8	22	0

This bed of coal is not mined commercially in the Raleigh-Mercer-Summers Area.

THE MIDDLE IAEGER SANDSTONE.

This sandstone occurs under the Iaeger Coal and is a massive, gray-brownish, sandstone from 30 to 40 feet in thickness. In Raleigh County the bed is often soft and friable, disintegrating easily.

THE LOWER IAEGER COAL.

This coal bed occurs underneath the Middle Iaeger Sandstone, and is from 0 to 2 feet in thickness, being double bedded, soft and gaseous. It is not mined commercially in West Virginia.

THE LOWER IAEGER SANDSTONE.

When the Lower Iaeger Coal is present, there occurs underneath same, a grayish brown, medium grained sandstone, from 20 to 30 feet thick that has been named the **Lower Iaeger Sandstone.** This sandstone is frequently friable and disintegrates easily.

THE LOWER IAEGER SHALE.

Underneath the Lower Iaeger Sandstone, there occurs a dark gray, laminated argillaceous shale from 20 to 30 feet in thickness, which has been designated the **Lower Iaeger Shale.** The shales often are brownish, almost coffee-colored, and sometimes laminated with thin streaks of bituminous slate.

THE HARVEY CONGLOMERATE SANDSTONE.

The next sandstone in descending order is the **Harvey Conglomerate**, so named from a small village of that name on Marsh Fork, now called Bolt. This bed ranges in thickness from 25 to 125 feet. In Raleigh it varies from 25 to 50 feet, and forms massive cliffs along the headwaters of Marsh Fork. At Surveyor the exposure is 40 feet thick and has been quarried for ballast by the Virginian Railroad and distributed along its line and used in tamping and surfacing the tracks. To the southeast along Slab Fork and Winding Gulf it becomes soft and friable.

THE SANDY HUFF SHALE.

This dark, argillaceous shale comes under the Harvey Conglomerate Sandstone, and varies in thickness from 0 to 30 feet in Raleigh County.

THE CASTLE COAL.

This coal occurs under the Sandy Huff Shale and ranges in thickness from 0 to 2 feet. It is a soft gaseous coal. It is not mined commercially in Raleigh, Mercer or Summers Counties.

THE GUYANDOT SANDSTONE.

The Guyandot Sandstone is the next stratum in descending order, and is a massive current bedded, medium grained, and often coarse, sandstone, and is a cliff maker in Raleigh, Mercer, McDowell and Wyoming Counties, from 50 to 75 feet in thickness. Sections of this sandstone are given on preceding pages of this volume.

THE SEWELL "B" COAL.

Underneath the Guyandot Sandstone, there frequently occurs a multiple bedded, soft, gaseous, columnar coal, from 0 to 5 feet in thickness, which has been called the **Sewell "B" Coal.**

THE SEWELL "A" COAL.

Underneath the Sewell "B" Coal, and separated from the same by sandy shale from 10 to 24 feet thick, occurs the **Sewell "A" Coal,** ranging in thickness from 0 to 1 foot. Sections of these coals are given in the many core test holes on preceding pages of this Report.

THE LOWER GUYANDOT SANDSTONE.

The Lower Guyandot Sandstone comes under the Sewell "A" Coal, and varies in thickness from 0 to 50 feet, and when present forms grayish white, medium grained, rugged cliffs. This sandstone is given in the sections of the core test holes on preceding pages of this Report.

THE SEWELL COAL.

The next stratum in descending order is the **Sewell Coal.** This is one of the most important beds of the New River Group. It was first commercially developed by John Nuttall at Nuttallburg, in 1874, and Dr. I. C. White first named this coal the **Nuttall Coal;** but Col. J. B. McGuffin began mining this bed at Sewell shortly after the coal was mined by Nuttall and the coal was named locally the **Sewell Coal,** from Sewell Mountain, where it had long years before been mined along the James River and Kanawha Turnpike, and has retained that name in the commercial markets ever since. The bed ranges in thickness from 2′ 6″ to 10 feet. When thin, it is usually a single bedded coal, but when it exceeds six feet, it usually becomes a multiple bedded seam. The red contours on Map II are based on the Sewell coal.

"This Sewell bed is a type of the best Pottsville Coals in all of the southwestern region of the State, and, being low in moisture, volatile matter, ash, sulphur and phosphorus, they are necessarily high in fixed carbon, constituting ideal steam and domestic fuels, since they are practically smokeless, with proper devices for securing good combustion. They are the only coals in the United States which equal or surpass in effec-

tive heating results for steam, domestic and general fuel purposes the best grades of Cardiff Coal from southern Wales."[1]

The following is a section of this bed at Nuttallburg at this type location:

			Ft.	In.
Sandstone, massive, Lower Guyandot.....				
Shale, dark, 0′ to.....			0	2
Coal, gas, soft, columnar.....	3′	4″		
Coal, soft.....	0	5	3	9
Fire clay floor.....				

The following section of this bed was measured by Krebs in Eccles Shaft No. 6 of the New River Collieries Company at Eccles:

			Ft.	In.
Slate roof.....				
Coal, gas, bright.....	2′	3″		
Coal, bony.....	0	1		
Coal, soft (to fire clay floor).....	2	4	4	8

The detailed crop of the Sewell Coal is shown by appropriate symbol on Map II. Its thickness and depth are given in a number of core test holes already given on preceding pages of this Chapter. Its thickness, character, composition and fuel value at the numerous commercial mines, prospect openings, country banks and crop exposures, are given in detail in the same Chapter along with an estimate by magisterial districts of its minable area and tonnage.

THE WELCH SANDSTONE.

Separated from the Sewell Coal by dark, gray, sandy shales from 5 to 40 feet thick, there occurs a massive current bedded, grayish white sandstone, from 0 to 50 feet in thickness, called the **Welch Sandstone.** This sandstone comes out of Surveyor Creek just south of Lester, and forms abrupt bluffs along its banks for about one-half mile. Quite frequently this sandstone is replaced by dark, laminated, shale as exposed along Craborchard Creek near Craborchard P. O.

[1]Dr. I. C. White, Vol. II, pp. 657-8, W. Va. Geol. Survey; 1903.

PLATE XVI.—View showing plateau topography of New River Group just west of Beckley.

THE WELCH COAL.

From 40 to 60 feet under the Sewell Coal bed occurs the **Welch Coal.** This coal was named by I. C. White from a town of the same name in McDowell County, where the coal is mined on a commercial scale. This is a multiple bedded, soft, columnar coal, from 0 to 5 feet in thickness. Sections of this coal are given in the numerous core test records already published in this Chapter.

THE UPPER RALEIGH SANDSTONE.

Underneath the Welch Coal occurs a heavy current bedded, grayish white to brown sandstone, from 50 to 75 feet thick, that has been named the Upper Raleigh Sandstone, from Raleigh County, where it was first studied by M. R. Campbell of the United States Geological Survey. Mr. Campbell, however, did not separate the Raleigh Formation (which is about 200 feet thick) into its separate members, since he assumed that it was all one solid sandstone mass. I. C. White found that it consisted of an upper Sandstone, which he called the Upper Raleigh, separated from a Lower Raleigh Sandstone by a shale interval containing a thin coal bed which he termed the Little Raleigh Coal in Volume II (A), page 198. This sandstone is frequently pebbly, and forms the upper walls of the New River canyon from Sewell south to Prince. It also forms great rugged cliffs sometimes 150 feet high.

THE LITTLE RALEIGH "A" COAL.

Underneath the Raleigh Sandstone, there often occurs a multiple bedded gas coal from 0 to 3 feet in thickness, which has been named the **Little Raleigh "A" Coal.** It is generally impure, and is not mined commercially in the State.

THE LITTLE RALEIGH COAL.

From 0 to 25 feet under the Upper Raleigh Sandstone, there occurs a fairly persistent, multiple-bedded, soft, columnar coal that has been named by I. C. White the **Little**

Raleigh Coal, varying in thickness from 0 to 4 feet. Sections of this coal are given in the records of the numerous core test holes published on preceding pages of this Report.

THE LOWER RALEIGH SANDSTONE.

Separated from the Upper Raleigh Sandstone by shale, slate and coal, from 5 to 20 feet in thickness, there occurs a massive, current bedded sandstone, forming prominent cliffs 50 to 100 feet thick, that has been named by I. C. White the **Lower Raleigh Sandstone.** This sandstone forms massive cliffs along Piney Creek, Slab Fork, Winding Gulf, Tommy Creek and Devils Fork. Near the head of Piney Creek, this sandstone is often replaced with shale and thin sandstone layers. Sections of this sandstone are given in the regular sections and core test holes on preceding pages of this Report.

THE BECKLEY "RIDER" COAL.

Underneath the Raleigh Sandstone, there often occurs a thin seam of soft coal from 0 to 2 feet in thickness, that has been called the **Beckley "Rider" Coal.** This is possibly a "split" off the Beckley Coal, and is usually less than three feet thick. The following section, measured by Krebs in Slab Fork Mine No. 5, of the Slab Fork Coal Co., shows the Beckley "Rider" Coal:

	Ft.	In.
Slate		
Coal, gas, Beckley "Rider"	0	4
Slate, 2′ to	4	0
Coal, gas, Beckley	4	4
Slate floor		

Another section is given in Crab Orchard Coal & Land Co. Core Test No. 11 (95) on page 258.

THE BECKLEY COAL.

Underneath the Lower Raleigh Sandstone, and separated from same by a dark gray argillaceous shale, from 0 to 17 feet in thickness, there occurs a very important coal. This coal bed has been named by Campbell the **Beckley Coal** from a

town of that name in Raleigh County, where the coal is mined extensively on a commercial scale, and varies in thickness from 0 to 10 feet. It is a multiple-bedded, soft, columnar coal, and is probably mined on a greater commercial scale in Raleigh County than any other bed. The following is a section of this seam taken in Mine No. 3 of the Raleigh Coal & Coke Company at Raleigh, at its type location and where first mined:

			Ft.	In.
Slate roof				
Coal, impure	0′ 2″			
Coal, soft, bright, gas	1 8			
Coal, harder, grayish	0 6	Beckley (2250′ B.)	5	2
Coal, soft, gas	1 4			
Coal, gas, columnar	1 6			
Fire clay floor				

The thickness, character and relative position of the Beckley Coal in the rock column are exhibited in the general sections and core test holes in preceding pages of this Report. The thickness, composition and fuel value of the Beckley Coal at commercial mines, crop exposures and core test holes, are given in Chapter VIII, along with an estimate by magisterial districts of its minable area and tonnage. Its crop is outlined in detail on Map II.

THE QUINNIMONT SANDSTONE.

Underneath the Beckley Coal, there occurs a massive, grayish, medium grained sandstone, from 0 to 66 feet in thickness, that has been named the **Quinnimont Sandstone,** from a village of that name in Fayette County. This sandstone forms rugged cliffs along New River from Sewell to Glade Creek and along Glade and Piney Creeks. It varies in thickness and is often displaced by dark gray shales, the formation being very irregular. In western Raleigh County, Mr. Ray V. Hennen thinks the shales and sandstones disappear entirely at some places, and the Beckley and Fire Creek Coals are united, forming a bed 10 feet in thickness, as is shown in the mines of the New River Collieries Company, at Eccles, the E. E. White Company at Glen White, the Slab Fork Coal Company at Slab

Fork, the McAlpin and the Gulf Smokeless Coal Company at Tams. Sections of the coals have been given on preceding pages of this Report.

THE FIRE CREEK (QUINNIMONT) COAL.

From 0 to 35 feet under the Quinnimont Sandstone, and often separated from the same by dark gray argillaceous shale, there occurs another important bed of coal named the **Fire Creek seam,** from a village of that name in Fayette County, where it was first mined. This bed is also called the **"Quinnimont"** and it is identical with the **Lower Beckley** at Slab Fork and Winding Gulf. It is a multiple-bedded, soft, columnar coal. The following is a section measured at Fire Creek at its type locality:

	Ft.	In.
Slate roof.....		
Coal, soft, columnar.....1′ 8″ }	3	6
Coal, harder (to slate floor).....1 10 }		

The following is a section measured by Krebs in Mine No. 3 of the New River Collieries Company at Eccles:

	Ft.	In.
Sandstone roof.....		
Coal, gas, columnar.....6′ 7″]		
Coal, hard.....0 5 }	12	0
Coal, gas, soft.....5 0]		

The parting between the two beds has entirely disappeared at this point. Another section measured by Krebs in Mine No. 3 of said Company shows as follows:

	Ft.	In.
Sandstone roof.....		
Coal, gas, columnar.....5′ 0″]		
Coal, bony.....0 7]		
Coal, gas.....0 9 }	10	9
Bone .....1 0]		
Coal, gas, soft (to slate floor)....3 5]		

This parting soon becomes thick in passing to the west in this mine. One characteristic is that when the parting begins to thicken the upper portion or Beckley Coal assumes an abrupt upward grade, while the lower portion, or Fire Creek Coal, has a more regular grade, indicating that the grade of

the Beckley Coal is more erratic and irregular, and the lower bed or Fire Creek is more regular in grade, but is not as thick as the Beckley bed. An instance of this thickening of the partings is shown in Mine No. 3 of the Slab Fork Coal Company, where the main haulway was driven on the Upper or Beckley bed for about 2,000 feet, going up over a heavy grade, the parting,—Quinnimont Sandstone and Shales—becoming about 30 feet thick at the apex, and thin at each end, while the grade remains uniform in the lower bed. A roadway was driven in the Lower bed, as shown in Figure 6. Its crop is shown in detail on Map II.

THE LITTLE FIRE CREEK COAL.

At 10 to 30 feet below the Fire Creek Coal, there comes a thin, soft gas coal, from 0 to 2 feet thick, that has been called the **Little Fire Creek Coal.** This bed is not mined commercially in this area.

THE PINEVILLE SANDSTONE.

Below the Little Fire Creek Coal, comes a massive current bedded sandstone, forming grayish cliffs along the Guyandot River and its tributaries, 50 to 85 feet high, and it has been called the **Pineville Sandstone.** This sandstone also forms cliffs along Piney and Glade Creeks.

THE NO. 9 POCAHONTAS COAL.

Under the Pineville Sandstone, there often occurs a coal 0 to 5 feet in thickness that has been named the **No. 9 Pocahontas Coal.** This coal has not yet been mined commercially in the State.

THE NO. 8 POCAHONTAS. COAL.

From 0 to 30 feet under the No. 9 Pocahontas Coal, comes an impure, soft, columnar coal, from 0 to 2 feet in thickness, that is named the **No. 8 Pocahontas Coal,** and is the basal member of the New River Group. This coal is not yet mined commercially in the State.

THE POCAHONTAS GROUP.

THE FLATTOP MOUNTAIN SANDSTONE.

The top of the Pocahontas Group begins with the **Flattop Mountain Sandstone**, a massive, often current bedded, micaceous, brownish sandstone. This sandstone caps the highest summits in the ridge near Coaldale, and occurs from 200 to 400 feet above the No. 3 Pocahontas Coal. The sandstone forms massive cliffs along Tommy and Stonecoal Creeks and Winding Gulf, and varies in thickness from 20 to 50 feet.

THE NO. 7 POCAHONTAS COAL.

From 17 to 30 feet under the Flattop Mountain Sandstone, and separated from same by dark gray shale, there comes a soft, columnar coal, from 0 to 3 feet in thickness, that has been named the **No. 7 Pocahontas Coal.** This coal has not yet been mined commercially in the State.

THE PIERPONT SANDSTONE.

Under the No. 7 Pocahontas Coal, there occurs a heavy current bedded sandstone from 40 to 60 feet thick that has been named the **Pierpont Sandstone** from a small village of that name in Wyoming County. This sandstone forms cliffs along Winding Gulf, Stonecoal and Tommy Creeks.

THE ROYAL SHALE.

From 0 to 40 feet under the Pierpont Sandstone occurs a buff, sandy shale that has been named the **Royal Shale** from a small village of that name in Raleigh County. The shales contain marine fossils. The following is a section obtained by Krebs on incline at Royal, 0.5 mile south of Prince:

		Ft.	In.
Shale, sandy, visible		10	0
Shale, sandy buff, marine fossils at base, Royal		8	0
Coal, gas 0′ 11″			
Shale, gray 0 1	No. 6 Pocahontas (1975′ B.)	2	6
Coal, gas (to slate floor) 1 0			

Another section was measured by Krebs, on divide between Crane and Flipping Creeks, in the **W. L. Coffey** country bank, S. 45° W. 0.6 mile from Crystal, as follows:

				Ft.	In.
Sandy shale, buff, marine fossils at base, Royal.				4	0
Coal, soft	0′	1″			
Shale, dark	0	6	No. 6 Pocahontas (2750′ B.)	4	1
Coal	0	1			
Sulphur	0	1			
Coal, soft (to slate)	3	4			

THE NO. 6 POCAHONTAS COAL.

Under the Royal Shale, comes a fairly persistent, multiple bedded soft coal that has been named the **No. 6 Pocahontas Coal.** Two sections of this coal are given under the Royal Shale above. The thickness, composition and fuel value at the several openings and crop exposures are given in detail on subsequent pages of Chapter VIII, along with an estimate of the minable area and tonnage by magisterial districts.

THE ECKMAN SANDSTONE.

From 0 to 5 feet under the No. 6 Pocahontas Coal, there comes a massive, micaceous, coarse grained sandstone, from 40 to 67 feet in thickness, that has been named the **Eckman Sandstone.** This sandstone bed often cuts out the Nos. 5 and 6 Pocahontas Coals and forms cliffs along the head of Flipping, Simmons and Crane Creeks in Mercer County, and Stonecoal Creek and Devils Fork in Raleigh County.

THE NO. 5 POCAHONTAS COAL.

Underneath the Eckman Sandstone, comes a thin, soft, columnar coal, 0 to 3 feet in thickness, that has been named the **No. 5 Pocahontas.** This bed is not yet mined commercially in the State.

THE NO. 4 POCAHONTAS COAL.

From 0 to 22 feet under the No. 5 Pocahontas Coal, comes the **No. 4 Pocahontas Coal** bed. This is a multiple bedded,

soft, columnar coal, from 0 to 6 feet in thickness, and is of commercial thickness and purity in a part of Raleigh, Mercer and Summers Counties. It is mined at several places along the Norfolk and Western Railway near Welch. The thickness, composition and fuel value of the No. 4 Pocahontas Coal, at the prospect openings in southern Raleigh and Mercer Counties, along with an estimate of the available area and tonnage by magisterial districts, are given on subsequent pages in Chapter VIII of this volume.

THE UPPER POCAHONTAS SANDSTONE.

At from 0 to 5 feet under the last coal discussed, occurs a massive, medium grained, current bedded sandstone, from 25 to 55 feet in thickness, that has been named the **Upper Pocahontas Sandstone.** The sandstone outcrops along Stonecoal and Tommy Creeks and Devils Fork. This sandstone also forms rugged cliffs along New River on Piney and Glade Creeks.

THE NO. 3 POCAHONTAS "RIDER" COAL.

Underneath the above described sandstone, often comes a thin bed of coal from 0 to 2 feet in thickness, called the **No. 3 Pocahontas "Rider" Coal.** This is possibly a "split" off the No. 3 Pocahontas vein, and is not of commercial thickness.

THE NO. 3 POCAHONTAS COAL.

From 0 to 10 feet under the last described bed occurs the famous **No. 3 Pocahontas Coal,** the most important coal bed in the Pocahontas Group, if not in the whole Pottsville Series. Its thickness varies from 0 to 15 feet, and it is extensively mined in Mercer, McDowell and Wyoming Counties. This is one of the coal beds that have made West Virginia famous as a producer of "smokeless" coal. It is one of the best fuel and steam coals in the world, and compares favorably with the coal mined in Great Britain. It is an ideal steam fuel, low in volatile matter, ash, sulphur and moisture, and high in fixed carbon. This coal gives off an intense heat with an almost smokeless combustion. The low percentage of sulphur insures

its safety from spontaneous combustion in storage, so that it becomes an excellent fuel for steamship and general naval purposes, and it has won a high standard as such fuel. The thickness, composition and fuel value of the No. 3 Pocahontas at the different mines, prospect openings and local banks in southern Raleigh and Mercer Counties, along with estimates of the available area and tonnage by magisterial districts, are given on subsequent pages in Chapter VIII. The yellow structure contours on Map II are based on the No. 3 Pocahontas Coal.

THE LOWER POCAHONTAS SANDSTONE.

From 0 to 10 feet under the last described coal comes a massive, often current bedded, sandstone, from 0 to 50 feet in thickness, called the **Lower Pocahontas Sandstone.** This bed often becomes shaly, when it often carries from 12 to 24 inches of impure coal, the **No. 2 "A" Pocahontas Coal.** This sandstone forms cliffs along the grade of the Virginian Railroad on Gooney Otter Creek, near Widemouth, in Mercer County.

THE NO. 2 POCAHONTAS COAL.

Under the Lower Pocahontas Sandstone, from 0 to 10 feet, occurs a multiple bedded, soft, columnar bed of coal, from 0 to 36 inches thick, that has been named the **No. 2 Pocahontas** bed. This coal has not yet been mined on a commercial scale in the State, but in a portion of Mercer and Raleigh Counties, it occurs of commercial thickness and purity, and will eventually be mined. On Stonecoal Creek, this bed is very regular and of good quality, being about 30 inches in thickness. The thickness, composition and fuel value of this bed will be further discussed on a subsequent page in Chapter VIII.

THE VIVIAN SANDSTONE.

From 0 to 5 feet under the No. 2 Pocahontas Coal, comes a bluish gray, medium grained sandstone, from 0 to 30 feet in thickness, that has been named the **Vivian Sandstone.** This bed appears along the Virginian Railroad grade, between Gi-

atto and Matoaka, and has been quarried for bridge piers and culverts by the Virginian Railroad Company.

THE NO. 1 POCAHONTAS COAL.

Under the Vivian Sandstone, there often appears a thin bedded, soft coal from 0 to 1 foot in thickness, that has been named the **No. 1 Pocahontas Coal.** This is an insignificant bed and is not mined in the area. A section of this coal in the grade of the Virginian Railroad at Giatto, shows it as 8 inches in thickness and impure, coming 90 feet under the No. 3 Pocahontas bed. In Raleigh and Summers Counties this coal is very thin and of no commercial importance.

THE KEYSTONE SANDSTONE.

Underneath the No. 1 Pocahontas Coal, and from 90 to 105 feet under the No. 3 Pocahontas Coal, there often occurs a buff, micaceous, medium grained sandstone, from 0 to 23 feet in thickness, that has been named the **Keystone Sandstone,** from a village of that name in McDowell County. The sandstone appears in the Virginia Railroad cut, just east of Giatto Station.

THE KEYSTONE COAL.

Underneath the Keystone Sandstone there occurs an impure coal, from 0 to 1 foot in thickness, that has been named the **Keystone Coal.** It is impure and of no commercial value.

THE NORTH FORK SHALE.

From 10 to 15 feet under the Keystone Coal, occurs a black shale, containing marine fossils. This bed, often carrying nuggets of iron ore, has a thickness of from 5 to 10 feet and has been named the **North Fork Shale.** The base of the shale occurs about 150 to 170 feet under the No. 3 Pocahontas Coal. These shales outcrop in Mercer County at different places along Simmons, Flipping, Crane and Widemouth Creeks. The following is a section one-half mile west of Goodwill:

		Thickness. Feet.	Total. Feet.
Coal, No. 3 Pocahontas		5	5
Sandstone and shale, conglomerate		160	165
Shale, dark, marine fossils ....1′ 0″ Shale, dark.....9 0	North Fork Shale	10	175
Shale, sandy		25	200
Shale, red (elevation, 2470′ B.)		5	205

Another section, measured by Krebs on the south side of Crane Creek, one mile southeast of McComas P. O., shows as follows:

		Thickness. Feet.	Total. Feet.
Coal, No. 3 Pocahontas		5	5
Sandstone, shale and concealed		170	175
Shale, dark, marine fossils.1′ Shale, dark.....5	North Fork Shale (2375′ B.)	6	181

The following section was measured by Krebs, on the east side of Crane Creek, ½ mile west of Matoaka:

		Thickness. Feet.	Total. Feet.
Coal, No. 3 Pocahontas		5	5
Sandstone, shale and conglomerate		160	165
Sandstone		2	167
Shale, sandy		4	171
Shale, dark, plant fossils ..... 0′ 8″ Shale, dark, marine fossils ..... 0 4 Shale, sandy, to railroad 10 0	North Fork Shale ..... (2385′ B.)	11	182

Northeast from Matoaka about 12 miles, at a point on the Giles, Fayette and Kanawha Turnpike, about two miles southeast of Flattop P. O., the following section was obtained by Krebs:

	Thickness. Feet.	Total. Feet.
Coal blossom, No. 3 Pocahontas	2	2
Sandstone, Lower Pocahontas	20	22
Shale, sandy	12	34
Shale, dark	3	37
Concealed	15	52
Sandstone	35	87
Concealed	10	97
Sandstone, concealed	25	122
Concealed	5	127
Sandstone, fine grained	25	152
Shale, sandy	4	156

	Thickness. Feet.	Total. Feet.
Shale, dark, plant fossils..2' } North Fork		
Shale, dark, marine fossils.1 } Shale	3	159
Shale, yellow.....	3	162
Shale, dark, iron ore.....	1	163
Red and yellow shale (2980' B.).....	10	173

The foregoing section illustrates the general structure and thickness of the North Fork Shale in Mercer County. These shales were not observed in Raleigh County.

A sample of the iron ore occurring 3 feet below the North Fork Shale in the above section was collected by Krebs (497-K) and it shows the following analysis by Messrs. Hite and Krak:

	Per cent.
Silica (SiO_2).....	21.89
Metallic Iron (Fe).....	39.06
Sulphur (S).....	0.08
Phosphorus (P).....	0.38
Calcium Oxide (CaO).....	0.37
Loss on ignition.....	11.85

THE SIMMONS COAL.

From 5 to 10 feet under the North Fork Shale, there is sometimes a thin bed of soft coal from 0 to 1 foot thick, that has been named the Simmons Coal. It has not yet been recognized in Raleigh County.

PART III.

Mineral Resources.

CHAPTER VII.

PETROLEUM AND NATURAL GAS.

The hard sandstone beds in West Virginia called sands make up the principal type of oil and gas producing zones, with the exception of the Greenbrier Limestone, termed "Big Lime" by the drillers. On page 299 of the Kanawha County Report, is given in descending order the stratigraphic position of all the developed oil and gas horizons in West Virginia.

With the exception of the Lower Freeport, all of the sands above the Allegheny Series pass into the air in the territory of this Report, and all those in the Allegheny and Pottsville crop to the surface in the eastern portion of the three counties. Very little drilling for oil and gas has been done in the area discussed in this Report.

OIL AND GAS PROSPECTING IN RALEIGH COUNTY.

More than 30 years ago, Capt. Thomas Allen, one of the early pioneers in the development of oil and gas in the southern part of West Virginia, drilled several wells along New River, among which was one at McKendree, Fayette County, and another at the mouth of Piney Creek near McCreery in Raleigh County. The writer was unable to get a detailed

record of this latter well from Capt. Allen, except that the depth of the well was about 1600 feet, and the material passed through was "Red rock and thin shells".

Another well was drilled on Dingess Branch of Marsh Fork, 2 miles north of Surveyor, the record of which is as follows:

Crock Mankin No. 1 Well Record (135).

Trap Hill District, on Dingess Branch, 2 miles north of Surveyor; authority, Marsh Fork Coal & Gas Co.; completed, October 11, 1911.

	Thickness. Feet.	Total. Feet.
Soil	8	8
Sandstone, gray	35	43
Slate	5	48
Coal	1	49
Sandstone, gray	10	59
Sandstone, pebbly	154	213
Slate and shale	150	363
Sandstone, gray	23	386
Slate	25	411
Sandstone, white	124	535
Slate	7	542
Coal	4	546
Sandstone and slate	20	566
Coal	3	569
Sandstone and slate	12	581
Coal	2	583
Sandstone, brown	22	605
Sandstone, black	5	610
Slate	53	663
Sandstone, grayish, with streaks of black	24	687
Sandstone, white	67	754
Sandstone, black	20	774
Sandstone	14	788
Slate	7	795
Coal	5	800
Sandstone, gray	90	890
Slate	10	900
Coal	7	907
Sandstone, dark	19	926
Sandstone, gray	35	961
Sandstone, dark	12	973
Sandstone, gray, with light streaks	9	982
Sandstone with light streaks, base of Pottsville	25	1007
Shale, red	64	1071
Sandstone, gray	25	1096
Red shale	48	1144
Slate	70	1214
Sand	5	1219
Shale, black	70	1289

	Thickness. Feet.	Total. Feet.
Sand and lime	130	1419
White sand	8	1427
Red rock	150	1577
Sand and lime	30	1607
Slate and shells	30	1637
Sand, shells and slate	33	1670
Slate and shells	50	1720
Pink rock and shells	115	1835
Red rock and shells	50	1885
Slate	20	1905
Pink rock and shale	30	1935
Sand shell and shale	45	1980
Slate and shells	20	2000
Pink rock	15	2015
Sand, shale and slate	40	2055
Pink lime and shale	19	2074
Shale, black	50	2124
Lime	11	2135
Slate	20	2155
Lime	15	2170
Shale	15	2185
Unrecorded to bottom	1315	3500

No oil or gas was found in any of the sands of this well.

OIL AND GAS PROSPECTING IN MERCER COUNTY.

Several years ago a well was drilled in the city of Princeton, and Mr. Wirt French, the postmaster of that city, reports that the boring was sunk to a depth of about 1,700 feet, where the tools were lost in the hole and it was abandoned.

The following is a partial record of a well now being drilled in Rock District, Mercer County, being the second well drilled in the County:

Griffith No. 1 Well Record.

Rock District, Mercer County; 1¼ miles east of Spanishburg, on Rich Creek; commenced, December, 1915; still drilling, May, 1916; authority, Rich Creek Oil & Gas Company; elevation, 2090′ B.

	Thickness. Feet.	Total. Feet.
Clay	16	16
Lime, hard	35	51
Coal ?	2	53
Sand	52	105
Slate	35	140
Lime, dark, hard	12	152
Slate	42	194
Lime (hole full of water at 220′)	41	235

	Thickness. Feet.	Total. Feet.
Red rock, limy	45	280
White lime	15	295
Dark lime	50	345
Soft slate	1	346
Hard lime	14	360
Slate	4	364
Shells	4	368
Slate	27	395
Lime	50	445
Slate	20	465
Lime	45	510
Red rock, limy	230	740
Lime	40	780
Red rock and shells	50	830
Lime	40	870
Red rock, limy	2	872
Lime	52	924
Red rock and shale	81	1005
Lime (8″ casing, 1069′)	48	1053
Red rock, limy	10	1063
Lime	20	1083
Red rock, limy	12	1095
Lime	39	1134
Black slate	20	1154
Sand	46	1200
Slate	28	1228
Lime, very hard	22	1250
Red rock, limy	8	1258
Sand, very hard, pebbly	100	1358
Red rock and slate	42	1400
Sand	13	1413
Slate and shells	52	1465
Red rock, limy	10	1475
Lime	10	1485
Red rock, limy	40	1525
Lime shells	60	1585
Black slate	25	1610
Sand	56	1666
Shells and black slate	134	1810
Dark slate	130	1940
Shells	45	1985
Dark lime	55	2040
Light slate	20	2060
Slate and shells	180	2240
Sand, pebbly	4	2244
Lime	81	2325
Slate and shells	85	2410
Dark lime	15	2425
Red rock	11	2436
Lime (6-⅝″ casing, 2500′)	64	2500
Black lime	150	2650
White lime	65	2715
Red rock	11	2726
Black slate	5	2731
White lime	69	2800

	Thickness. Feet.	Total. Feet.
Black slate and shells	30	2830
Slate and shells	75	2905
White lime	27	2932
Black lime	66	2998
Broken lime	106	3104
Red rock	15	3119
Lime, gritty	61	3180
Lime, gritty	180	3360
Red rock	45	3405
Sand	30	3435

OIL AND GAS PROSPECTING IN SUMMERS COUNTY

There has been more prospecting for oil and gas in Summers County than in Raleigh and Mercer. Several wells have ben drilled in Summers, but thus far no oil or gas in commercial quantities has been encountered.

The record of the **Baker Estate No. 1 Well (221)**, located in Jumping Branch District, on Beech Run, 1.5 miles from its mouth and 2 miles southwest of Hinton, drilled by the Summers Oil and Gas Company in 1914, elevation, 1586′ L., is published on page 87 in the Section 2 Miles Southwest of Hinton. The record shows the thickness of the Big Lime to be 962 feet. A small flow of gas was encountered at 385, 1085 and 1900 feet. Well abandoned as dry hole.

Gwinn No. 1 Well Record.

Green Sulphur District, on Lick Creek, near Green Sulphur Springs; completed, April 16, 1914; authority, Green Sulphur Oil & Gas Company; elevation, 1550′ B.

	Thickness. Feet.	Total. Feet.
Gravel	20	20
Red rock	215	235
White slate	15	250
White lime	10	260
White slate	20	280
Red rock	20	300
Slate	30	330
Red rock	20	350
White slate	15	365
Red rock	25	390
Black lime	20	410
Red rock	30	440
White slate	20	460

	Thickness. Feet.	Total. Feet.
Red rock	40	500
Black lime	10	510
Red rock	45	555
Black slate	15	570
Salt sand	50	620
White slate	100	720
Black lime	15	735
White slate	3	738
Black lime	17	755
White slate	10	765
Little Lime, black	65	830
Pencil Cave	75	905
Big Lime	695	1600
White slate	25	1625
Big Injun Sand	75	1700
Slate and shells	325	2025
Gray sand	15	2040
Hard lime shells	60	2100
Slate	15	2115
Hard lime shells	85	2200
White sand, Berea	25	2225
Flinty shells	65	2290
Black slate	50	2340
Lime and flint shells	480	2820
Black shale	5	2825
Lime and flint	175	3000

The above section records a little gas at 2100, 2365, 2760 and 2825 feet. No gas in commercial quantities was found. Well abandoned.

Another well, located at Crumps Bottom, in Pipestem District, the record of which is published in Volume I(A), pages 504-5, of the Survey Reports, 1904, and drilled to a depth of 3000 feet, found only a little gas in the Big Injun Sand at about 2500 feet.

Another well was drilled at Pence Spring Station, in Talcott District. According to Capt. M. Warren, its promoter, the well was drilled to a depth of about 3000 feet, with considerable gas in the Big Lime, but not of commercial quantity.

Owing to the meager information at hand concerning the lower strata, no attempt will be made by the writer to work out in detail the prospective oil and gas territory in the Raleigh-Mercer-Summers Area. The structural map of the area shows the folds and troughs of the counties, and it will be noted that the measures rise rapidly to the southeast.

The sections already given on preceding pages of this

Report show the rapid thickening to the southeast of the strata in the Pottsville and Mauch Chunk Series. This thickening of the strata has a tendency to level off the lower rocks, so that the rapid rise shown on the structural map does not really represent the lay of the lower rocks. Hence while it is **possible** that oil and gas may be found in the lower sands when thoroughly prospected, there is very little **probability** that they will be found in commercial quantity.

CHAPTER VIII.

COAL.

A systematic account has been given in Chapters V and VI of all the different coals that were observed in the three counties, giving their sections, correlation and detailed sections of some of the less important seams. In this Chapter a number of sections will be given of those coals which are of commercial thickness and purity, an estimate of the probable tonnage to be derived from each, and lastly a table of analyses showing the chemical composition of the coal samples collected and of analyses already made by the Survey, and of the analyses of different commercial mines made by the U. S. Bureau of Mines.

STATISTICS OF COAL PRODUCTION.

Commercial mining began in Mercer County at the completion of the Norfolk & Western Railway in 1888 and in Raleigh County in 1887, when the coal was first mined in the Royal Mine at Prince, by conveying the coal in buckets on suspended wire ropes across New River from the mines to the railroad cars.

Commercial mining in Raleigh and Mercer Counties is now being carried on in six beds; viz, Winifrede (Dorothy), Sewell, Beckley, Fire Creek, No. 6 Pocahontas and No. 3 Pocahontas. These coals are mined principally by drifts. However, there are several shafts for the Sewell and Beckley seams in Raleigh County.

In Mercer County all the mining is being done by drifts and they are located along the Norfolk & Western and Virginian Railways. No commercial mines are operated in Summers County.

The mines in Raleigh County are located along the Chesapeake and Ohio, the Virginian, and the Kanawha, Glen Jean, and Eastern Railroads.

The following tables are compiled from the annual report of Hon. Earl Henry, Chief of the Department of Mines of West Virginia, for the year ending June 30, 1914:

Coal Production of Mercer County from 1883 to 1914 inclusive.

Year.	Tons of 2240 lbs.	Year.	Tons of 2240 lbs.
1888	162,645	1903	1,274,003
1889	144,803	1904	1,274,070
1890	144,403	1905	1,738,333
1891	1,210,723	1906	2,023,460
1892	1,175,141	1907	2,009,522
1893	1,196,574	1908	1,823,674
1894	886,942	1909	2,103,263
1895	865,379	1910	2,542,867
1896	1,308,417	1911	2,533,728
1897	873,300	1912	2,183,866
1898	1,044,379	1913	2,829,810
1899	1,144,258	1914	2,850,499
1900	1,046,937		
1901	1,052,153	Total	38,097,170
1902	1,104,523		

Coal Production of Raleigh County from 1894 to 1914 inclusive.

Year.	Tons of 2240 lbs.	Year.	Tons of 2240 lbs.
1894	48,365	1906	823,666
1895	84,762	1907	1,104,676
1896	89,279	1908	1,259,420
1897	63,701	1909	1,797,812
1898	79,315	1910	2,547,721
1899	93,370	1911	3,335,417
1900	63,360	1912	4,581,776
1901	102,089	1913	4,690,744
1902	272,106	1914	5,066,221
1903	244,088		
1904	406,226	Total	27,420,294
1905	661,180		

Order in the Production of Coal by Counties, 1897-1914.

Counties.	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Fayette	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2
McDowell	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1
Marion	3	3	3	3	3	3	3	4	3	4	4	4	4	4	4	4	3	3
Kanawha	4	4	4	4	4	4	5	3	4	3	3	3	3	3	3	3	7	5
Mercer	5	5	5	6	6	6	6	6	6	6	6	6	6	7	8	8	8	8
Harrison	9	9	8	7	5	5	4	5	5	5	5	5	5	5	5	6	4	6
Tucker	6	6	7	5	7	7	7	8	8	8	10	10	10	10	10	10	10	11
Mingo	8	8	9	9	9	8	8	7	7	7	7	7	9	9	9	9	9	9
Mineral	7	7	6	8	8	9	11	11	12	13	14	13	11	13	15	17	16	16
Preston	13	11	10	10	10	10	9	10	10	9	9	11	13	11	11	11	11	10
Taylor	10	10	11	11	11	11	14	16	16	16	17	17	16	15	14	13	13	13
Marshall	11	12	12	12	13	16	13	14	14	15	15	18	19	16	18	16	15	14
Randolph	..	..	..	14	14	14	12	13	13	12	13	14	14	14	13	14	14	15
Barbour	19	19	17	18	12	12	10	9	11	11	11	12	12	12	12	12	12	12
Raleigh	16	16	16	19	17	13	15	12	9	10	8	8	8	6	6	5	5	7
Putnam	12	13	13	13	15	15	16	15	15	14	18	16	17	17	17	18	18	18
Ohio	15	15	14	15	16	17	18	19	21	22	21	21	21	20	20	20	20	19
Brooke	17	18	18	20	20	20	23	22	17	17	16	15	15	18	16	15	17	17
Mason	14	14	15	16	18	19	19	20	22	21	22	22	22	22	22	25	25	25
Grant	..	..	..	..	..	..	22	18	19	19	20	20	20	21	21	23	24	24
Logan	..	..	..	..	..	..	..	..	20	18	12	9	7	8	7	7	6	4
Monongalia	20	17	19	17	19	18	17	17	18	20	19	19	18	19	19	19	19	21
Hancock	18	20	20	21	21	21	20	21	24	24	23	25	26	24	27	..	..	..
Clay	..	..	..	..	..	..	..	25	23	23	24	27	30	30	25	24	22	22
Nicholas	..	..	..	..	..	22	24	24	25	25	25	26	27	26	24	29	27	..
Lincoln	..	..	..	..	..	23	21	23	27	26	30	30	25	28	28	..	30	29
Braxton	..	..	..	..	..	..	..	..	..	..	26	23	23	23	23	22	23	23
Wayne	..	..	..	..	..	..	..	..	26	27	29	29	28	29	32	28	28	30
Upshur	..	..	..	..	..	..	..	..	..	28	27	24	24	25	29	31	29	27
Greenbrier	..	..	..	..	..	..	..	..	..	..	28	28	29	32	30	27	32	33
Lewis	..	..	..	..	..	..	..	..	..	..	31	31	32	33	33	30	31	32
Gilmer	..	..	..	..	..	..	..	..	..	..	32	32	31	31	31	26	26	28
Wyoming	..	..	..	..	..	..	..	..	..	..	..	33	34	34	..	..	33	31
Boone	..	..	..	..	..	..	..	..	..	..	..	..	33	27	26	21	21	20

Production of Coal and Coke by Mines in Raleigh County for the Year Ending June 30th, 1913.

Name of Company.	Name of Mine.	Production of Coal (Long Tons)			Distribution of Coal (Tons of 2,240 lbs.)				Railroad Location.
		First Six Months	Second Six Months	Total Coal Produced During Year	Used in Operation of Mine	Furnished Local Trade and Tenants	Used in Coke Ovens	Quantity Shipped from Mines	
Pemberton Coal & Coke Co.	Affinity	22,659	34,638	57,027	3,120	274		53,633	Virginian
Pemberton Coal & Coke Co.	Big Stick	37,307	68,164	105,867		377		105,490	Virginian
E. E. White Coal Co.	Nos. 1 and 2	145,958	179,736	325,684	7,200	2,289		316,195	Virginian
E. E. White Coal Co.	Nos. 3, 5, 6 and 7 Drifts	78,338	97,114	175,452		4,323		171,129	C. & O. and Virginian
McKell Coal & Coke Co.	Oswald Nos. 1, 2 and ?	55,463	51,172	106,635		273		106,362	K. G. J. & E.
McKell Coal & Coke Co.	Graham Nos. 1 and 2.	36,964	32,109	69,073		525		68,548	K. G. J. & E.
McKell Coal & Coke Co.	Tamroy	55,283	43,917	99,200		550		98,650	K. G. J. & E.
New River Collieries Co.	Eccles Nos. 3 and 4.	93,552	95,576	189,128	7,273	3,653		178,202	C. & O. and Virginian
New River Collieries Co.	Eccles No. 5	101,015	118,642	219,657	7,877	1,054		210,726	C. & O. and Virginian
New River Collieries Co.	Eccles No. 6	63,011	52,618	115,629		855		114,774	C. & O. and Virginian
Four States Coal & Coke Co.	Dorothy	85,652	119,586	205,238	4,475	1,576		199,187	C. & O.
Four States Coal & Coke Co.	Sarita	60,318	111,159	171,477				171,477	C. & O.
Stonewall Coal & Coke Co.	Stonewall Nos. 1 and 3	17,341	15,241	32,582	300	160		32,122	C. & O
Stonewall Coal & Coke Co.	Terry Nos. 2 and 3.	29,079	31,498	60,577	1,200	370		59,007	C. & O.
Raleigh Coal & Coke Co.	Raleigh Nos. 1, 2 and 4	30,543	29,806	60,349	3,576			56,773	C. & O.
Raleigh Coal & Coke Co.	Raleigh No. 3	57,116	70,497	127,613				127,613	C. & O.
Raleigh Coal & Coke Co.	Raleigh No. 5	6,308	4,327	10,635				10,635	C. & O.
Raleigh Coal & Coke Co.	Raleigh No. 6	86,045	114,898	200,943				200,943	C. & O.
Cranberry Fuel Co.	Sprague	39,377	41,780	81,157	3,246	863		77,075	C. & O. and Virginian
Cranberry Fuel Co.	Cranberry	64,529	58,802	123,331	6,768	1,248		115,315	C. & O. and Virginian
Wright Coal & Coke Co.	Wright No. 1	21,373	14,108	35,481	750			34,731	C. & O.
Wright Coal & Coke Co.	Wright No. 2	26,528	26,312	52,840	330	120		52,390	C. & O.
Piney Mining Company	Piney Nos. 1 and 2.	50,751	48,827	99,578	4,320	2,160		93,098	C. & O.
Piney Mining Company	Piney No. 3	27,278	28,107	55,385		900		54,485	C. & O.
Piney Mining Company	Piney No. 4	39,731	40,803	80,534		5,654		74,880	C. & O.
Winding Gulf Colliery Co.	Winding Gulf Nos. 1 and 2	84,695	94,727	179,422	2,700	800		175,922	C. & O. and Virginian
Gulf Smokeless Coal Co.	Lynwinn	172,761	177,016	349,777	6,000	1,500		342,277	C. & O. and Virginian
Lynwinn Coal Co.	Tams Nos. 1, 2, and 3.	44,309	41,689	85,998	446	624		84,928	Virginian
Gulf Coal Company	Nos. 1, 2, 3 and 4.	44,876	63,646	108,522	2,000	500		106,022	Virginian
Sullivan Coal & Coke Co.	Sullivan Nos. 1, 2, 3, 4 and 5	40,000	70,000	110,000	2,400	1,200		106,400	C. & O.
Blue Jay Lumber Co.	Blue Jay No. 4	14,024	7,544	21,568	400	240		20,928	C. & O.
Slab Fork Coal Co.	Nos. 1, 2, 3, 4, 5, 6 and 7	153,973	131,702	285,675		1,870		283,805	Virginian
Clear Fork Coal & Coke Co.	Leevale	12,305	21,741	34,046	766	16		33,264	C. & O.
Wood Peck Coal Co.	Wood Peck	10,558	10,236	20,794	20	150		20,624	C. & O.
City Coal Co.	Combs	2,237	1,476	3,713		1,000		2,713	C. & O.
Mabscott Coal & Coke Co.	Mabscott	39,282	32,070	71,352				71,352	C. & O. and Virginian
MacAlpin Coal Co.	MacAlpin	124,233	133,128	257,361	2,400	1,196		253,765	C. & O. and Virginian
Bailey Wood Coal Co.	Woodbay	76,050	54,000	130,050	645	320		129,085	Virginian
Beckley Coal & Coke Co.	Beckley Slope	53,050	36,092	89,142	4,563	2,487		82,092	C. & O. and Virginian
Lanark Coal Co.	Lanark No. 4	20,975	15,858	36,833	1,157	306		35,370	C. & O.
Price Hill Fuel Co.	Price Hill	27,785	17,634	45,419	6,626	420		38,373	C. & O. and Virginian
Total		2,253,018	2,437,726	4,690,744	80,558	39,826		4,570,360	

Production of Coal and Coke by Mines in Mercer County for the Year Ending June 30th, 1913.

Name of Company.	Name of Mine.	Production of Coal (Long Tons)			Distribution of Coal (Tons of 2,240 lbs.)				Railroad Location.
		First Six Months	Second Six Months	Total Coal Produced During Year	Used in Operation of Mine	Furnished Local Trade and Tenants	Used in Coke Ovens	Quantity Shipped from Mines	
Booth-Bowen Coal & Coke Co.....	Booth-Bowen	84,243	87,097	171,343	1,800	1,230	39,985	128,325	N. & W.
Godfrey Coal Co.....	Cephus	12 608	13,003	25,611	60	60	.....	25,491	N. & W.
Spring Coal Mining Co.....	Spring	36,488	34,710	71,198	1,200	500	.....	69,498	N. & W.
Buckeye Coal & Coke Co.....	Buckeye	81,956	74,704	156,660	1.000	403	33,871	121,386	N. & W.
Louisville Coal & Coke Co.....	Louisville-Goodwill...	84,039	88,412	172,451	5,776	1,485	25,286	139,904	N. & W.
The Pawama Coal & Coke Co.....	Pawama Nos. 1 and 2.....	45,206	46,589	91,795	1,107	918	.....	89,770	N. & W.
The Weyanoke C. & C. Co.....	Weyanoke and Elihu..	63,187	62,596	125,783	5,200	2,000	.....	118.538	N. & W.
The Smokeless C. & C. Co.....	Smokeless	19,860	20,823	40,683	450	300	.....	39,933	N. & W.
Hiawatha Coal & Coke Co.....	Hiawatha	54,588	47,769	102 357	1,250	1,000	.....	100,107	N. & W.
Crystal Coal & Coke Co.....	Crystal No. 1.....	81,081	72,345	153,426	1,000	250	59,273	92,903	N. & W.
Crystal Coal & Coke Co.....	Crystal No. 2.....	21,710	24,900	46,610	.....	250	.....	46,360	N. & W.
Wenonah Coal & Coke Co.....	Wenonah No. 1.....	36,231	29,516	65,747	975	400	.....	64.372	N. & W.
Wenonah Coal & Coke Co.....	Wenonah No. 2.....	21,814	43,089	64,903	.....	1,600	.....	63,303	N. & W.
Mill Creek Coal & Coke Co.....	Coaldale	63,005	46,932	109,937	490	490	18,074	90,883	N. & W.
Mill Creek Coal & Coke Co.....	Mill Creek East, West, West Fork and Tug River....	90,101	88,186	178,287	650	625	24,218	152,794	N. & W.
The Thomas Coal Co.....	Thomas No. 1.....	66 697	63,624	130,321	1,000	250	45,607	83,464	N. & W.
The Thomas Coal Co.....	Thomas No. 2.....	27,902	29,191	57,003	.....	250	.....	56,843	N. & W.
American Coal Co.....	Crane Creek.....	120,321	122,309	242,630	2,954	1,693	66,343	171,640	N. & W.
American Coal Co.....	Piedmont	26,843	41,241	68,084	206	480	.....	67,398	N. & W.
American Coal Co.....	Pinnacle	103,105	107,763	210,868	8,345	1,305	54 359	146,859	N. & W.
Poca. Cons. Collieries Co.....	Sagamore Nos. 1 and 2.....	112,110	112,786	224,896	3,000	6,000	13,776	202,120	N. & W.
Poca. Cons. Collieries Co.....	West	19,000	21,000	40,000	.....	.....	.....	40,000	N. & W
Poca. Cons. Collieries Co.....	Caswell Creek, Hemlock and Elkhorn.....	146,170	132,960	279 130	10,000	5,000	.....	264,130	N. & W.
Totals	.....	1,418,265	1,411,545	2,829,810	46,463	26,489	380,792	2,376,066	

PLATE XVII.—View of plateau topography of New River Group southwest of Beckley.

In Raleigh, Mercer and Summers Counties, there are 25 minable coals in addition to 38 other smaller coals that are too thin, impure or irregular to be considered as minable so long as the thick coal seams are available. The minable coals in descending order are as follows:

The No. 5 Block, of the Allegheny Series; the Stockton-Lewiston, Coalburg, Winifrede, Hernshaw, Cedar Grove, Alma, Campbell Creek (No. 2 Gas), Eagle, Little Eagle, Lower War Eagle, of the Kanawha Group; the Douglas, Sewell, Welch, Beckley, Fire Creek, Little Fire Creek, No. 8 Pocahontas, of the New River Group; the No. 6 Pocahontas, No. 4 Pocahontas, No. 3 Pocahontas and No. 2 Pocahontas, of the Pocahontas Group.

Figures 3 and 4 show the different coal seams of the three counties, giving both their relative importance and the maximum intervals between them. As they thin to the northwest, the intervals given will not show the true condition for the western part of the area. Detailed sections in Chapters IV and VI will show what coals may be found in different parts of the three counties.

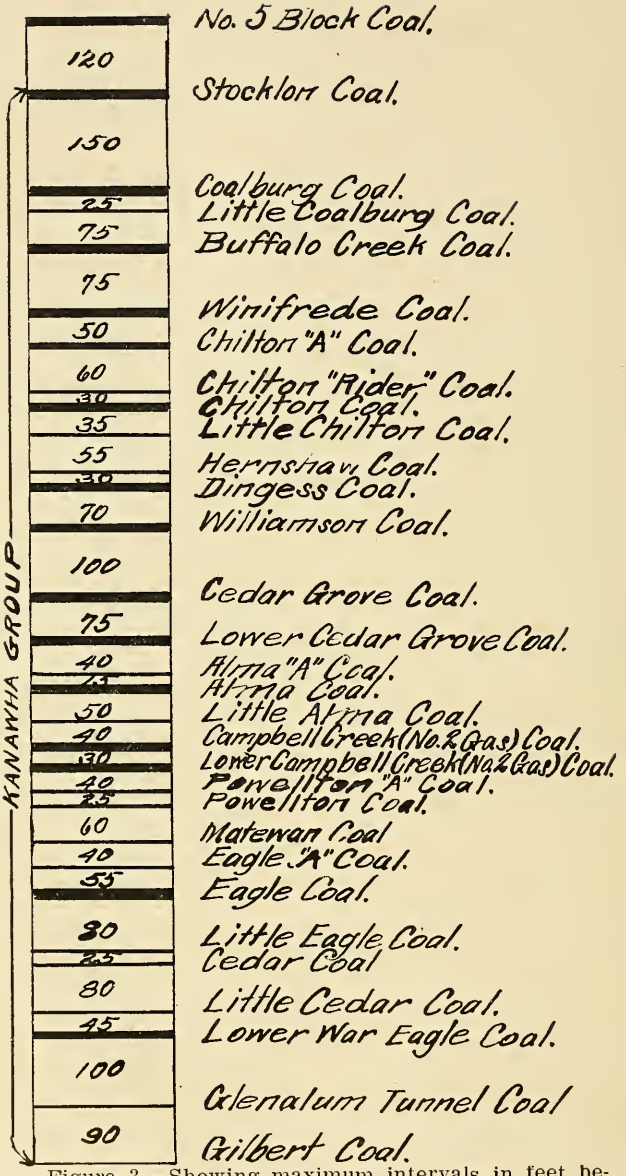

Figure 3.—Showing maximum intervals in feet between Coal Seams of the Raleigh-Mercer-Summers Area. All except No. 5 Block in Kanawha Group.

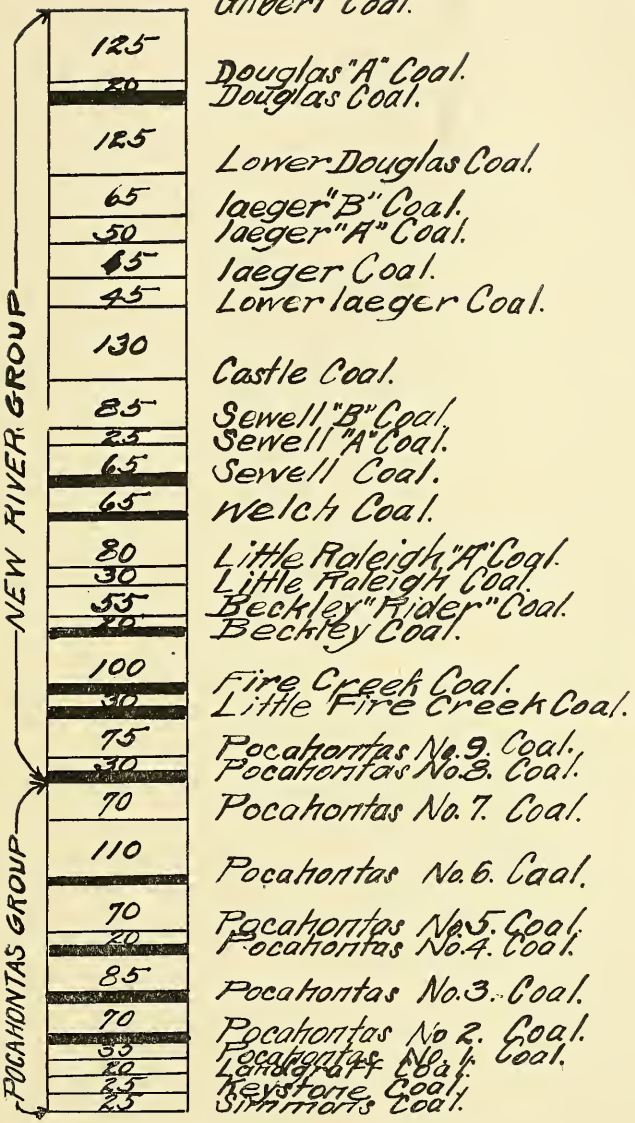

Figure 4.—Showing maximum intervals in feet between Coal Seams of Raleigh-Mercer-Summers Areas in the New River and Pocahontas Groups. All except Gilbert which is in the Kanawha Group.

MINABLE COALS OF THE KANAWHA GROUP.

THE STOCKTON-LEWISTON COAL.

The Stockton-Lewiston Coal, briefly described in Chapter VI, page 335, occurs in the hills in the northwestern part of Raleigh County, and for that reason the prospect openings are few as very little effort has been made to prove its thickness and purity.

Clear Fork District, Raleigh County.

In Clear Fork District, the Stockton-Lewiston Coal crops high on Kayford Mountain. The following crop exposure was measured by Krebs along road leading from Kayford to Colcord:

Kay and Ford Prospect—No. 109 on Map II.

On Kayford Mountain, 1.2 miles north of Lawson; **Stockton-Lewiston Coal**; elevation, 2215′ B.

	Ft.	In.
Sandstone, **Homewood**		
Shale, dark	2	0
Coal blossom	3	0

Another opening examined by Krebs shows the following:

Anchor Coal Company Prospect—No. 111 on Map II.

In Sherman District, Boone County, at High Coal, just south of Anchor Mine on Seng Creek, ½ mile north of the Boone-Raleigh County Line; **Stockton-Lewiston Coal**; elevation, 1970′ B.; Butts, N. 45 W.; Faces, N. 45 E.; Dip to the northwest.

			Ft.	In.
Sandstone, **Homewood**, massive				
Coal, impure	0′	4″		
Coal, splint	2	8		
Slate	0	2		
Coal, splint (to slate floor)	2	4	5	6

Prospect opening not fully driven under cover.

Passing to the south of Marsh Fork where the Four States Coal & Coke Company has been testing for the Stockton Coal, the following sections have been found by them:

Four States Coal & Coke Co. Prospect—No. 111A on Map II.

On south side of Marsh Fork, at Dorothy; **Stockton-Lewiston Coal**; elevation, 1990′ B.

	Ft.	In.
Sandstone roof		
Coal, block (to slate floor)	5	1

Four States Coal & Coke Co. Prospect—No. 112 on Map II.

On south side of Marsh Fork, 2.0 miles west of Dorothy; **Stockton-Lewiston Coal**; elevation, 1990′ B.

			Ft.	In.
Sandstone roof				
Coal, splint	2′	4½″		
Slate	0	3		
Coal	0	4		
Slate	0	4		
Slaty **coal**	0	5½		
Shale, gray	1	8½		
Coal, splint	0	10		
Slate	0	1		
Coal	0	2		
Slate	0	1		
Coal, splint	1	1½		
Slate	0	0½		
Coal, splint (slate floor)	1	8½	9	6

As these coals are very near the tops of the hills and a thick bed lies farther under this one, very little prospect work has been done to test the thickness and purity of the coal seam.

Marsh Fork District, Raleigh County.

In Marsh Fork District, the Stockton-Lewiston Coal appears on Cherry Pond Mountain, where a few prospects have been made.

E. J. Berwind Prospect—No. 113 on Map II.

Crook District, Boone County, on head of James Creek of West Fork, 3.5 miles southeast of Chap and almost ¼ mile west of the Boone-Raleigh County Line; **Stockton-Lewiston Coal**; elevation, 2275′ B.

	Ft.	In.
Sandstone roof		
Coal, splint (to slate floor)	2	7

Prospect opening not driven in fully under cover. A few more crop exposures of the Stockton-Lewiston Coal indicate that this bed is present in Cherry Pond Mountain, but has not been fully prospected.

Quantity of the Stockton-Lewiston Coal Availaleb.

Based on the evidence of the preceding pages, and with a calculation of the area by Teets, the following estimate is made of the probable amount of Stockton-Lewiston Coal:

Probable Amount of Stockton-Lewiston Coal.

Raleigh County, by Districts:	Average Thickness, Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	3	1	640	83,635,200	334,541
Marsh Fork	2	6	3,840	334,540,800	1,338,163
Totals		7	4,480	418,176,000	1,672,704

THE COALBURG COAL.

The horizon of the Coalburg Coal appears high on the hills in Clear Fork and Marsh Fork Districts, but from the sections given on preceding pages of this Report, it will be noted that this bed is thin and of little commercial value, as far as it has been prospected, so that no estimate will be made of the available coal in this bed.

THE WINIFREDE COAL.

The Winifrede Coal has possibly reached its greatest development in Raleigh County, at Dorothy, where it was first mined and named the Dorothy Coal. The bed has very few impurities and is a split seam with sufficient gas and block coal to make it a superior steam and domestic fuel. The probable minable area of the Winifrede Coal is shown with the No. 3 Pocahontas Coal on Figure 8.

Clear Fork District.

In Clear Fork District, the Winifrede Coal occurs in the hills from 800 to 1400 feet above the bed of Clear Fork of Coal River. The coal is mined on both the north and south sides of Clear Fork. The lease of the Anchor Coal Company extends from Boone County across the County Line into Raleigh, where several prospect openings have been made by that Company, one of which shows as follows:

Anchor Coal Co. Prospect—No. 114 on Map II.

On west side of Rockhouse Creek, 2.2 miles northeast of Dorothy; **Winifrede Coal**; elevation, 1740′ B.; butts, N. 42° W.; faces, N. 48° E.; prospect opening not fully driven under cover.

			Ft.	In.
Slate roof				
Coal, splint	2′	6″		
Coal, splint, glossy	2	0		
Coal, splint, gray	1	4		
Slate	0	2		
Coal, gas	1	3	7	3

Clear Fork Coal Co. Mine—No. 1 on Map II.

On north side of Clear Fork, 1 mile east of Jarrolds Valley; **Winifrede Coal**; elevation, 1690′ B. by Teets; butts, N. 43° W.; faces, N. 47° E.

				Ft.	In.
1.	Sandstone roof				
2.	**Coal**, gray, splint	0′	4″		
3.	Bone	0	0½		
4.	**Coal**, gray, splint	1	8½		
5.	**Coal**, block	2	3		
6.	Slate	0	2		
7.	**Coal** (to slate floor)	0	3	4	9

Coal mined by Clear Fork Coal Company; principal office, Charleston; capacity, 400 tons per day; coal shipped by C. & O. Ry. East and West; sample No. 201T collected by Teets from Nos. 2, 4, 5 and 7, but not analyzed.

Four States Coal & Coke Co.—Dorothy Mine—No. 2 on Map II.

On south side of Clear Fork, at Dorothy; **Winifrede Coal**; elevation, 1993′ L.; section published on page 284, Volume II(A), of Survey Reports; butts, N. 48° W.; faces, S. 42° W.

				Ft.	In.
1.	**Coal**, splint	1′	6″		
2.	Shale	0	1		
3.	**Coal**, splint	4	0		
4.	Slate	0	1		
5.	**Coal**	0	4		
6.	Slate	0	1		
7.	**Coal**	0	6		
8.	Slate	0	4		
9.	**Coal**, gas	2	1	10	0

Coal owned by operating Company; principal office, Pittsburgh, Pa.; daily capacity, 1200 tons; mule and electric haulage; used for steam and domestic fuel; shipped East and West.

Analysis of sample No. 35 published in Bulletin 2, page 285, of the Survey Reports, is republished under **Mine No. 2** in the table of coal analyses at the end of this Chapter.

Four States Coal & Coke Co. Mine—No. 3 on Map II.

On south side of Clear Fork, one mile southeast of Dorothy; **Winifrede Coal**; elevation, 2140′ L.; section by Krebs; in air course, 1200 feet from drift mouth.

				Ft.	In.
1.	Dark shale roof				
2.	**Coal**, splint	1′	6″		
3.	Slate, 1″ to	0	1¼		
4.	**Coal**, splint, glossy	3	10		
5.	Slate, 1″ to	0	3		
6.	**Coal**	0	2		
7.	Slate, gray	0	1		
8.	**Coal**, splint	1	4		
9.	**Coal**, gray, splint	2	2	9	5¼

Daily capacity, 1500 tons; electric haulage; coal shipped East and West for steam and domestic fuel; butts, N. 48° W.; faces, N. 42° E.; sample No. 457-K collected from Nos. 2, 4, 6, 8 and 9 by Krebs.

The composition of this sample is published under **Mine No. 3** in the table of coal analyses at the end of this Chapter.

Four States Coal & Coke Co. Prospect—No. 115 on Map II.

On head of Speed Branch of Sycamore Creek, 1.5 miles south of Colcord; elevation, 2430′ B.; by Teets; **Winifrede Coal**; butts, N. 44° W.; faces, N. 46° E.

			Ft.	In.
Slate roof				
Coal, splint	0′	6″		
Slate	0	0¼		
Coal, splint	1	6½		
Slate	0	1		
Coal, splint, glossy	4	0		
Slate	0	5		
Coal, block	2	6½		
Slate	0	0½		
Coal, block	2	3½		
Slate	0	0½		
Coal, gas (to slate floor)	0	8	12	1¾

Prospect opening not fully driven under cover.

At the head of Raines Fork of Sycamore Creek, the Rowland Land Company has made an opening on the Winifrede Coal and the following section was obtained by Teets:

Rowland Land Company Prospect—No. 116 on Map II.

On head of Raines Fork of Sycamore Creek, 3 miles southeast from Colcord; **Winifrede Coal**; elevation, 2560′ B.; butts, N. 46° W.; faces, N. 44° E.

			Ft.	In.
Slate roof				
Coal, gray, splint	1′	5″		
Slate, gray	0	3		
Coal	0	0½		
Slate, gray	0	2½		
Coal, gas	0	8		
Slate, gray	0	0¾		
Coal, block	0	3¼		
Coal, gray splint	1	6		
Slate, gray	0	2		
Coal, gray splint	1	9		
Coal, block	0	10		
Coal, gray splint	2	0		
Slate, dark	0	0¼		
Coal, gray splint	0	9¾		
Coal, block	0	4		
Slate, dark	0	1		
Coal, block	1	9		
Slate, gray	0	0½		
Coal	0	3½		
Slate, gray	0	8		
Coal	0	1		

			Ft	In
Slate	0′	4″		
Coal, impure	0	2		
Slate, gray	1	0		
Coal, splint	2	8		
Slate, gray	3	10		
Coal	0	3		
Slate, gray	0	10		
Shale, sandy	1	0		
Coal	0	8		
Slate, dark	0	0¾		
Coal, block	0	7¼		
Bone	0	4		
Coal, block	1	4	26	4

Another opening was measured by Teets on the head of Right Fork of Sycamore Creek, about 0.7 mile west of Opening No. 116 and 3 miles south of Colcord, as follows:

Rowland Land Co. Coal Opening—No. 117 on Map II.

Winifrede Coal; elevation, 2545′ B.; butts, N. 43° W.; faces, N 47° E.

					Ft.	In.
1.	Sandstone roof					
2.	**Coal,** gas	0′	8″			
3.	**Coal,** impure	0	5			
4.	Shale, gray	1	2			
5.	**Coal,** block	0	8½	7′ 7″		
6.	Slate, gray	0	0½			
7.	**Coal,** splint	1	7			
8.	Slate, dark	0	2½			
9.	**Coal,** gray, splint, visible	3	8			
10.	Concealed and gray slate			12 0	24	3
11.	**Coal,** visible	2′	6″			
12.	Slate, gray	2	0	4 8		
13.	**Coal**	0	2			

The composition of a sample (215-T) collected from Nos. 5, 7 and 9 is published under **No. 117** in the table of coal analyses at the end of this Chapter.

Marsh Fork District.

On Marsh Fork District, the Winifrede Coal, as shown by Map II, occurs from 800 to 1,500 feet above the bed of the streams. However, as Coal River and Cherry Pond Mountains, in their highest development, are from 1,500 to 1,800 feet above the bed of stream, there is quite a body of this coal remaining uneroded in this district.

Marsh Fork Coal Co. Mine—No. 4 on Map II.

On Little Marsh Fork, 0.8 mile east of Emerson; **Winifrede Coal;** elevation, 1878′ L.

				Ft.	In.
1.	Sandstone				
2.	Slate			2	6
3.	**Coal**	0′	2″		
4.	Shale, dark	0	10		
5.	**Coal,** hard splint	1	4		
6.	Slate, dark	0	1		
7.	**Coal,** splint, glossy	4	0	6	5

"Coal mined by Marsh Fork Coal Company; principal office, Charleston; daily capacity, 600 tons; 125 laborers and miners employed; electric and mule haulage; shipped East and West for domestic and steam fuel; W. H. Pettus, Supt., authority for data; butts, N. 47° W.; faces, N. 43° E.; sample collected from Nos. 5 and 7 of section in Room No. 1 of No. 2 Entry by Krebs.

The composition of this sample is published under **No. 4** in the table of coal analyses at the end of this Chapter.

Four States Coal & Coke Co. Prospect—No. 118 on Map II.

On Little Marsh Fork, west side of Bacon Hollow, 1.5 miles south of Dorothy; **Winifrede Coal;** elevation 2808′ B.; section by Krebs; prospect opening driven in 68 feet; butts, N. 47° W.; faces, N. 43° E.

			Ft.	In.
Slate roof				
Coal	1′	4½″		
Slate	0	0½		
Coal, splint	4	6		
Slate	0	2		
Coal	1	4		
Slate	2	4		
Coal	0	2		
Slate	0	9		
Coal	0	8		
Slate	0	4		
Coal	2	11		
Slate	0	1		
Coal	0	4	15	0

Four States Coal & Coke Co. Prospect—No. 119 on Map II.

On west side of Beetree Branch of Little Marsh Fork, 2.3 miles south of Dorothy; elevation, 2100′ B.; **Winifrede Coal**; prospect opening driven in 50 feet; butts, N. 43° W.; faces, N. 47° E.

				Ft.	In.
Slate roof					
Coal, splint	4′	8″			
Slate	0	5			
Coal	0	1			
Slate	2	0			
Coal, splint	1	5			
Slate	0	3			
Coal, splint	2	1			
Slate	0	2			
Coal (to slate floor)	0	8	.....	11	9

The slate parting in the middle decreases to the northeast as is shown in another opening 0.6 mile east of Opening No. 119, as follows:

Four States Coal & Coke Co. Prospect—No. 120 on Map II.

On south side of Little Marsh Fork, 2.2 miles south of Dorothy; **Winifrede Coal**; elevation, 2140′ B.; by Krebs; prospect opening driven in 48 feet; butts, N. 44° W.; faces, N. 46° E.

				Ft.	In.
Slate roof					
Coal, splint	1′	6″			
Slate	0	1			
Coal, splint	4	5			
Slate	1	6			
Coal	1	4			
Slate	0	3			
Coal, splint	3	9			
Slate	0	2			
Coal, gas (slate floor)	0	6	.....	13	6

The Rowland Land Company, of Charleston, has recently made a number of prospect openings in the Winifrede Coal on its holdings on Marsh Fork. A few of these openings will now be given:

Rowland Land Company Prospect—No. 121 on Map II.

On west side of Marsh Fork, north of Stone Hollow, 2.1 miles southwest of Jarrolds Valley; **Winifrede Coal**; elevation, 1725′ B.; section by Krebs; butts, N. 40° W.; faces, N. 50° E.; prospect opening driven in about 10 feet.

			Ft.	In.
Sandstone				
Shale, dark			1	10
Slate			0	2
Coal, splint	0′	11 ″		
Slate	0	1		
Coal, splint	1	5½		
Slate	0	1½		
Coal, splint	3	2½	5	9½

Rowland Land Company Prospect—No. 122 on Map II.

On west side of Marsh Fork, between Steer and Sandlick Hollows, 3 miles southwest of Jarrolds Valley; **Winifrede Coal**; elevation, 1790′ L.; section by Teets; prospect opening driven in 10 feet; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Sandstone, massive				
Slate			0	2
Coal, splint	1′	0″		
Slate	0	1		
Coal, splint (slate floor)	4	1	5	2

Rowland Land Company Prospect—No. 123 on Map II.

On head of Lower Big Branch of Marsh Fork, 3.6 miles southwest from Jarrolds Valley; **Winifrede Coal**; section by Teets; elevation, 1785′ B.; driven in 10 feet; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Sandstone				
Slate			0	6
Coal, splint	0′	9½″		
Slate	0	2		
Coal, splint	1	9½		
Slate	0	1		
Coal, splint (slate floor)	1	8	4	6

Rowland Land Company Prospect—No. 124 on Map II.

On west side of Upper Big Branch, 4 9 miles south from Jarrolds Valley; **Winifrede Coal**; elevation, 1845′ B.; section by Teets; driven in 15 feet; butts, N. 44° W.; faces, N. 46° E.

			Ft.	In.
Slate roof				
Coal, splint	0′	8 ″		
Slate	0	1½		
Coal, splint	4	8½	5	6

Rowland Land Company Prospect—No. 125 on Map II.

On west side of Ellis Creek of Marsh Fork, 5.1 miles south of Jarrolds Valley and 1 mile east of opening No. 124; **Winifrede Coal**; elevation, 1870′ B.; section by Teets; butts, N. 48° W.; faces, N. 42° E.

			Ft.	In.
Shale roof				
Coal, splint	1′	2 ″		
Slate	0	2		
Coal, splint	2	0½		
Slate	0	1		
Coal, splint	2	8	6	1½

Rowland Land Company Prospect—No. 126 on Map II.

On east side of Upper Big Branch of Marsh Fork, 5.1 miles south from Jarrolds Valley and 0.3 mile southwest of opening No. 124; **Winifrede Coal**; elevation, 1970′ B.; section by Teets; butts, N. 46° W.; faces, N. 44° E.

			Ft.	In.
Shale roof				
Coal, splint	0′	8 ″		
Slate	0	1½		
Coal, splint, glossy	4	8½	5	6

Rowland Land Company Prospect—No. 127 on Map II.

On west side of Marsh Fork, 5.0 miles south of Jarrolds Valley and 0.1 mile south of opening No. 124; **Winifrede Coal**; elevation, 1950′ B.; section by Teets; butts, N. 45° W.; faces, N. 45° E.

			Ft.	In.
Sandstone roof				
Coal	0′	1¼″		
Slate	0	3		
Coal, splint	4	11	5	3¼

Rowland Land Company Prospect—No. 128 on Map II.

On Rock Fork of Hazy Creek, 6.9 miles southwest from Jarrolds Valley; **Winifrede Coal;** elevation, 1990′ B.; section by Teets; butts, N. 45° W.; faces, N. 45° E.

			Ft.	In.
Sandstone roof.....				
Coal, splint	1′	4½″		
Slate	0	2½		
Coal, splint, glossy.....	2	4		
Slate, dark.....	0	6		
Coal, splint.....	2	8½	7	1½

Rowland Land Company Prospect—No. 129 on Map II.

On west side of Marsh Fork, on the head of Sugar Camp Hollow, 5.4 miles south of Jarrolds Valley; **Winifrede Coal;** elevation, 2095′ B.; section by Teets; butts, N. 45° W.; faces, N. 45° E.

			Ft.	In.
Sandstone roof.....				
Coal	0′	4 ″		
Slate	0	5½		
Coal, splint.....	2	4½		
Slate	0	1		
Coal, splint.....	2	4	5	7

Rowland Land Company Prospect—No. 130 on Map II.

On west side of Right Fork of Shumate Creek, 7.3 miles south of Jarrolds Valley; **Winifrede Coal;** elevation, 2160′ B.; section by Teets; butts, N. 46° W.; faces, N. 44° E.

			Ft.	In.
Sandstone roof.....				
Coal, splint.....	0′	7 ″		
Slate	0	8		
Coal	0	3		
Slate	0	0½		
Coal, splint.....	1	11½		
Slate	0	3½		
Coal, splint.....	1	7½		
Slate	0	1		
Coal (slate floor).....	0	6	6	0

Two miles north and on the east side of Marsh Fork, near the head of Stink Run, the following section was obtained by Krebs:

Rowland Land Company Prospect—No. 131 on Map II.

On east side of Marsh Fork on the head of Stink Run, 5.6 miles south of Jarrolds Valley; **Winifrede Coal**; elevation, 2170′ B.; driven in 10 feet; butts, N. 45° W.; faces, N. 45° E.

			Ft.	In.
Sandstone roof.....				
Coal	0′	3″		
Slate	0	2		
Coal, splint.....	5	4	5	9

Rowland Land Company Prospect—No. 132 on Map II.

On Left Fork of Horse Creek, just northeast of Squealer Knob; **Winifrede Coal**; elevation, 2400, B.; section by Teets; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Slate roof.....				
Coal	0′	2½″		
Slate	0	3		
Coal, splint.....	1	9½		
Slate	0	1		
Coal, splint (slate floor).....	2	9	5	1

Rowland Land Company Prospect—No. 133 on Map II.

On head of Sturgeon Fork of Dry Creek, 4.3 miles south of Colcord; **Winifrede Coal**; elevation, 2635′ B.; section by Teets; butts, N. 44° W.; faces, N. 46° E.

			Ft.	In.
Slate roof.....				
Coal, splint.....	1′	2½″		
Slate	0	1		
Coal	0	1½		
Slate	1	9½		
Coal, splint.....	2	1		
Slate	0	4		
Coal, splint (slate floor).....	4	8	10	3½

Rowland Land Company Prospect—No. 134 on Map II.

On west side of Dry Creek, near head of same, 4.6 miles south of Colcord; **Winifrede Coal**; elevation, 2740′ B.; section by Teets; prospect opening driven in 15 feet; butts, N. 44° W.; faces, N. 46° E.

			Ft.	In.
Slate roof.....				
Coal, splint.....	1′	7 ″		
Slate	0	3		

			Ft.	In.
Coal	0′	1½″		
Slate	2	4		
Coal	0	7		
Slate	0	1		
Coal, splint	5	4		
Slate	0	3		
Coal, splint	2	6	13	0½

Rowland Land Company Prospect—No. 134A on Map II.

On west side of Dry Creek, just east of Pond Knob, 4.4 miles southeast from Colcord; **Winifrede Coal**; elevation, 2750′ B.; section by Teets.

				Ft.	In.
1.	Slate roof				
2.	**Coal**	0′	10″		
3.	Slate, gray	0	7		
4.	**Coal**	0	2		
5.	Slate, gray	0	9		
6.	**Coal**	0	10		
7.	Slate and concealed	7	0		
8.	**Coal**, visible	2	0	12	2

The composition of a sample (233-T) collected from Nos. 2, 6 and 8 is published under **No. 134A** in the table of coal analyses at the end of this Chapter.

Another opening was obtained by Teets, on the head of Canterbury Branch of Drews Creek, 1.2 miles southwest of Citie, where there is a considerable area of the Winifrede Coal:

Rowland Land Company Prospect—No. 135 on Map II.

On head of Canterbury Branch of Drews Creek, 2.1 miles southwest of Citie; **Winifrede Coal**; elevation, 2790′ B.; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Slate roof				
Coal, splint	0′	3″		
Coal, impure	0	6		
Coal, splint	0	2		
Coal, splint	1	3		
Slate	0	1		
Coal, splint	2	5	4	8

Quantity of Winifrede Coal Available.

Based on the evidence of the preceding pages, and on a determination of the area by Teets with planimeter, the following estimate is made of the probable amount of Winifrede Coal in the two districts, no deduction being made for the amount already mined as this amount is insignificant when compared to the total:

Probable Amount of Winifrede Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork.....	7	4.7	3,008	917,199,360	3,668,797
Marsh Fork.....	8	13.8	8,832	3,077,775,360	12,311,101
Totals		18.5	11,840	3,994,975,720	15,979,898

THE HERNSHAW COAL.

The next bed of coal below the Winifrede in Raleigh County that is of sufficient thickness and purity to be of commercial value is the **Hernshaw Coal,** coming 210 to 260 feet under the Winifrede Coal. The Chilton Coal appears to be split up into several thin seams and is of little commercial value, so far as it has been prospected in Raleigh County. The Hernshaw Coal has practically been overlooked in prospecting for the coals in Raleigh County, owing to the fact that there are a number of thicker seams which are naturally first investigated, since they have a much greater commercial value. A few sections of the Hernshaw Coal will now be given.

Clear Fork District.

Four States Coal & Coke Co. Prospect—No. 137 on Map II.

On south side of Clear Fork, at Dorothy; **Hernshaw Coal;** elevation, 1682′ L.; section by Krebs; butts, N. 48° W.; faces, N. 42° E.

Coal, block, hard (with slate roof and floor)..... 2′ 9½″

The coal in the above opening has the appearance of mining into large glossy lumps.

Four States Coal & Coke Co. Prospect—No. 138 on Map II.

On south side of Clear Fork, ½ mile west of Dorothy; **Hernshaw Coal**; elevation, 1662′ L.; section by Krebs; butts, N. 50° W.; faces, N. 40° E.; slate roof and floor.

			Ft.	In.
Coal, block	1′	3 ″		
Slate	0	0½		
Coal, block	0	6½	2	10

Rowland Land Company Prospect—No. 139 on Map II.

On south side of Clear Fork, 1.2 miles southeast of Jarrolds Valley; **Hernshaw Coal**; elevation, 1470′ B.; section by Krebs; slate roof and floor; butts, N. 48° W.; faves, N. 42° E.

Coal, block	2′ 7″

Marsh Fork District.

No prospecting has been done in Marsh Fork District for the Hernshaw Coal. A few places were found where this bed was exposed. The following are sections obtained by Krebs:

Rowland Land Company Prospect—No. 140 on Map II.

On west side of Little Marsh Fork, 0.5 mile southwest of Emerson; **Hernshaw Coal**; elevation, 1610′ B.; section by Krebs; butts, N. 48° W.; faces, N. 42° E.; prospect opening driven in 10 feet.

			Ft.	In.
Sandstone roof				
Coal, gas	1′	10″		
Fire clay, gray	0	8		
Shale, dark	0	2		
Coal, block	1	7		
Shale, dark	1	6		
Coal, block	0	5		
Slate	0	5		
Coal, block	1	1		
Slate	0	2		
Coal, block	0	9	8	7

Rowland Land Company Prospect—No. 141 on Map II.

In head of Dry Creek, 2.8 miles northeast of Masseysville; **Hernshaw Coal**; elevation, 2500′ B.; section by Krebs; butts, N. 70° W.; faces, N. 20° E., shale roof; slate floor.

			Ft.	In.
Coal, block	1′	1 ″		
Shale, dark	0	1		
Coal	0	2		
Slate, gray	0	0½		
Coal, block	0	5		
Bone	0	3		
Coal, block	1	5½	3	6

Quantity of Hernshaw Coal Available.

Based on the evidence of the preceding pages and on planimetric determinations of the area of Teets, the following estimate is made for the two districts of Raleigh that contain the Hernshaw Coal in minable thickness:

Probable Amount of Hernshaw Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	2.5	10	6,400	696,960,000	2,787,840
Marsh Fork	2.0	21	13,440	1,170,892,800	4,683,570
Totals		31	19,840	1,867,852,800	7,471,410

THE CEDAR GROVE COAL.

The Cedar Grove Coal appears only in Clear Fork and Marsh Fork Districts of Raleigh, and from the sections found exposed in these districts, it is evident that the bed is of minable thickness, but owing to the thicker seams in this district, very little prospecting has been done thereon. A few sections will now be given showing the thickness and structure:

Clear Fork District.

Four States Coal & Coke Co. Prospect—No. 142 on Map II.

On incline at Dorothy; **Cedar Grove Coal**; elevation, 1533′ L.; section by Krebs; butts, N. 50° W.; faces, N. 40° E.; shale roof and floor.

				Ft.	In.
Coal	0′	10″			
Slate	0	1			
Coal, block	1	7			
Slate	0	1			
Coal, block	1	2	Cedar Grove		
Slate	2	3	"Thacker"	8	11
Coal	0	2			
Slate	0	1			
Coal	0	8			
Slate	1	0			
Coal, splint	1	0			

Both sections of the Cedar Grove bed are represented in the above section.

Four States Coal & Coke Co. Prospect—No. 143 on Map II.

On south side of Clear Fork, 1 mile west of Dorothy; **Cedar Grove Coal**; elevation, 1456′ L.; slate roof and floor; butts, N. 70° W.; faces, N. 20° E.

			Ft.	In.
Coal, splint	0′	6″		
Slate	0	2		
Coal, splint	2	9	3	5

Another section was obtained by Krebs on the south side of Clear Fork, 1 mile east of Jarrolds Valley, as follows:

Rowland Land Company Prospect—No. 144 on Map II.

On south side of Clear Fork, 1 mile southeast of Jarrolds Valley; **Cedar Grove Coal**; elevation, 1340′ B.; slate roof and floor; butts, N. 70° W.; faces, N. 20° E.

			Ft.	In.
Coal, splint	0′	5½″		
Slate	0	1		
Coal, splint	2	7	3	1½

The **Willis Branch Coal Company**, of Herberton, Fayette County, has recently made developments at that point and has

prospected for the Cedar Grove Coal. The following section was obtained by Krebs on this lease, the land being owned by the McKinley Land Company:

McKinley Land Company Prospect—No. 145 on Map II.

In Fayetteville District, Fayette County, south of head of Willis Branch, 1.2 miles west of Herberton and 0.2 mile north of the Raleigh-Fayette County Line; **Cedar Grove Coal**; elevation, 2775′ B.; butts, N. 30° W.; faces, N. 60° E.; opening 10 feet under cover.

			Ft.	In.
Coal (with dark shale roof)...	0′	1″		
Slate	0	1		
Coal, splint.....	0	6		
Shale, dark.....	0	6		
Coal	0	1		
Shale, dark.....	0	2		
Coal, splint.....	0	2		
Shale, dark.....	0	3		
Coal	0	2		
Coal, impure.....	0	3		
Coal, splint.....	2	7		
Slate	0	1		
Coal, splint (to slate floor)....	1	2	.....	6 1

Marsh Fork District.

In Marsh Fork District, the Cedar Grove Coal appears thin where the sections were exposed.

Rowland Land Company Prospect—No. 144A on Map II.

On north side of Little Marsh Fork, 0.8 mile southeast of Emerson; **Cedar Grove Coal**; elevation, 1390′ B.

Coal, splint (with slate roof and floor)..... 2′ 1″

Several other surface exposures of the Cedar Grove Coal were found along drains and branches, showing from 2 feet to 2 feet 6 inches of coal.

Quantity of Cedar Grove Coal Available.

Based on the evidence of the preceding pages and on the area determined by Teets with planimeter, the following estimate is made of the Cedar Grove Coal in Clear Fork and Marsh Fork Districts:

Probable Amount of Cedar Grove Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft.	In.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	2	2	18.0	11,520	1,103,984,640	4,415,939
Marsh Fork	2	0	34.0	21,760	1,895,731,200	7,582,925
Totals			52.0	33,280	2,999,715,840	11,998,864

THE ALMA COAL.

The **Alma Coal** has been briefly described in Chapter VII. It is found of commrecial thickness in Clear Fork and Marsh Fork Districts, Raleigh County, being mined in two commercial mines in Fayette County, near the Raleigh-Fayette County Line, and producing an excellent steam and gas coal. This coal comes between the Campbell Creek-No. 2 Gas Coal and the Cedar Grove, so that it is often mistaken for one of these beds, especially the former.

Clear Fork District, Raleigh County.

In Clear Fork, no openings except exposures on the crop were observed in the northern part of the district, but several openings have been recently made in the southern part.

Long Branch Coal Company Mine—No. 5 on Map II.

On west side of Paint Creek, 2.5 miles northwest of Herberton, Fayette County, ½ mile east of Potato Hill in Raleigh-Fayette County Line; **Alma Coal;** elevation, 2480′ B.

					Ft.	In.
1.	Dark shale roof					
2.	**Coal,** gas	3′	6″			
3.	Slate, 2″ to	0	0			
4.	**Coal,** soft, columnar	2	2		5	8
5.	Fire clay floor					

Butts, N. 30° W.; Faces, N. 60° E.; principal office, Mt. Hope, W. Va.; capacity, 500 tons daily; number of men employed, 60; coal shipped to Norfolk, Va., for tidewater points.

The following are results of analyses made by the Spring Coal Company, 50 Congress Street, Boston, Mass., from samples taken from cars shipped to tidewater from the mines:

Average analysis of seven cargoes shipped prior to July 1, 1913:

	Per cent.
Volatile Matter	28.97
Fixed Carbon	66.00
Ash	5.03
Total	100.00
Sulphur	0.68
B. T. U.	14,801

Average analysis taken from three cargoes 2000 tons each, shipped October, 1913:

	Per cent.
Moisture	1.72
Fixed Carbon	67.01
Volatile Matter	27.24
Ash	4.03
Total	100.00
Sulphur	0.86
B. T. U. (dry)	15,153

Fusing temperature of ash, 2570° F.

Evaporation, 10.64 pounds water per pound of dry coal from and at 212° F.

Analysis cargo per barge "Dunlo" B/L January 13, 1914:

	Per cent.
Moisture	0.543
Volatile Matter	27.277
Fixed Carbon	67.450
Ash	4.730
Total	100.000
B. T. U. (dry basis)	15,380

Analysis of coal shipped by barge "Carrie Clark" B/L April 24, 1914:

	Per cent.
Volatile Matter	29.73
Fixed Carbon	66.21
Ash	4.06
Total	100.00
Sulphur	0.80
B. T. U. (dry basis)	15,010

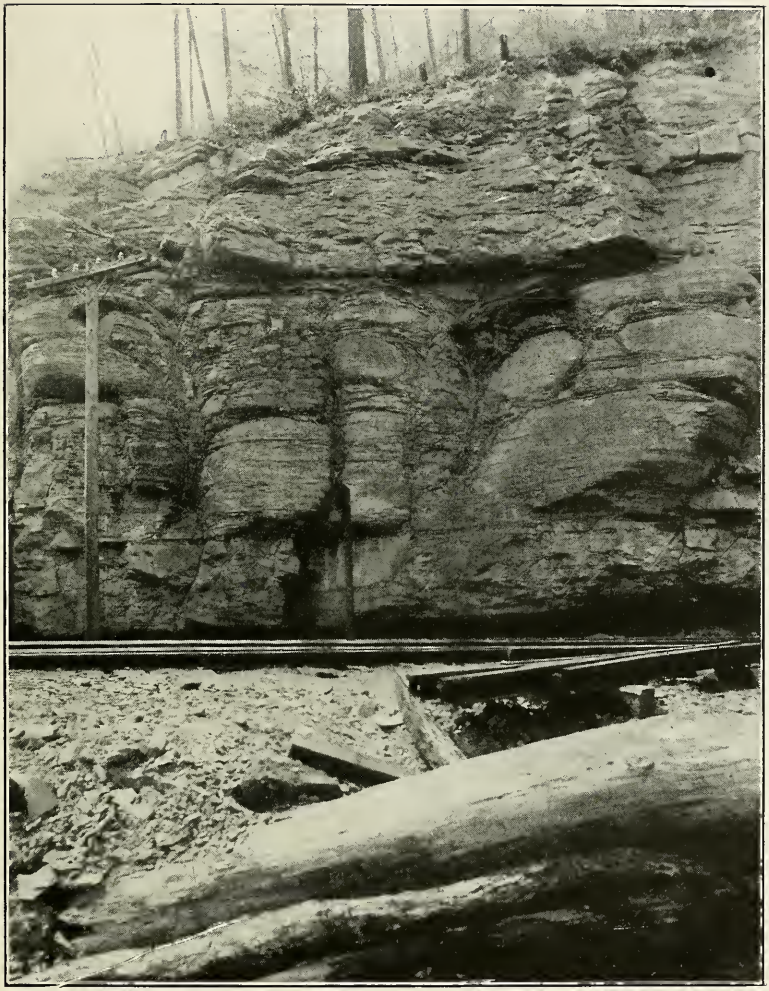

PLATE XVIII.—Concretionary weathering of sandy shales above Beckley Coal just west of Lynwinn.

Analysis of coal shipped per Schr. "Mary E. Palmer" B/L November 6, 1914, 2323 tons:

	Per cent.
Moisture	4.78
Volatile Matter	27.64
Fixed Carbon	62.69
Ash	4.89
Total	100.00
Sulphur	0.90
B. T. U. (dry basis)	14,757

Analysis of coal per barge "J. B. Walker" B/L November 30, 1914, 3385 tons:

	Per cent.
Moisture	2.06
Volatile Matter	26.56
Fixed Carbon	65.78
Ash	5.60
Total	100.00
Sulphur (separately determined)	0.74
B. T. U. (dry)	14,798

Iron in ash as iron oxide (Fe_2O_3), 6.51 per cent.

Coal ash tested in the form of a cone placed horizontally in a furnace with an oxidizing atmosphere began to bend at 2700° F. and was completely bent at 2765° F.

The coal is very friable and mines easily; the slate roof is generally good and the fire clay floor hard and smooth, which makes it an ideal pick mining coal.

Willis Branch Coal Co. Mine—No. 6 on Map II.

On east side of Paint Creek, at Herberton, Fayetteville District, Fayette County, and ½ mile east of the Raleigh-Fayette County Line; **Alma Coal**; elevation, 2676'; slate roof and floor.

			Ft.	In.
Coal, gas	1'	3"		
Slate, 1" to	0	0		
Coal	0	2		
Slate	0	2		
Coal, gas, columnar	4	6	6	1

In the section 1 mile north of Kingston P. O., published on page 56 of this report, the Alma Coal appears to have split into two beds as shown in the following sections:

Solvay Collieries Co. Prospect—No. 145A on Map II.

On west side of Milburn Creek of Paint Creek, 1 mile west of Kingston P. O., Fayette County; Alma Coal; elevation, 2416′ L.

			Ft.	In.
Coal, gas (with slate roof)	1′	8″		
Shale	7	10		
Coal, gas (to slate floor)	2	2	11	8

The Rowland Land Company has just completed several prospects in the Alma bed, sections of which have been furnished the writer by their engineers, Messrs. Edwards and Colcord, as follows:

Rowland Land Company Prospect—No. 146 on Map II.

On head of Toney Fork, N. 60° W. 2.5 miles from Herberton; Alma Coal; elevation, 2425′ B.; butts, N. 40° W.; faces, N. 50° E.; slate roof and floor.

			Ft.	In.
Coal, gas	2′	0″		
Slate	0	1		
Coal, gas, soft	3	10	5	11

Rowland Land Company Prospect—No. 147 on Map II.

On Davis Fork of Sycamore Creek, S. 40° E., 3.9 miles from Colcord; Alma Coal; slate roof and floor; butts, N. 45° W.; faces, N 45° E.

			Ft.	In.
Coal, gas	2′	2″		
Slate	2	4		
Coal, gas	2	9	7	3

Rowland Land Company Prospect—No. 148 on Map II.

On Right Fork of Sycamore Creek, 2.4 miles south of Colcord; Alma Coal; elevation, 1890′ B.; slate roof and floor.

			Ft.	In.
Coal	0′	2 ″		
Slate	0	1½′		
Coal, gas	2	8		
Slate	1	2		
Coal and slate, interlaminated	0	3		
Coal	0	4	4	8½

Another opening, driven in 20 feet, about 1000 feet south of Prospect No. 148, shows the following:

Rowland Land Company Prospect—No. 149 on Map II.

On Right Fork of Sycamore Creek, 2.6 miles south of Colcord; **Alma Coal**; elevation, 2015′ B.; slate roof and floor.

			Ft.	In.
Coal, gas	0′	3 ″		
Slate	0	3		
Coal, gas	2	2		
Slate	0	1½		
Coal, gas	0	4	3	1½

Rowland Land Company Prospect—No. 149A on Map II.

On south side of Clear Fork, on Boyd Branch, S. 85° W. 1.6 miles from Artie; **Alma Coal**; elevation, 2040′ B.

			Ft.	In.
Slate, black (with sandstone roof)	0′	1½″		
Coal	0	2		
Slate	0	0½		
Coal	3	9		
Slate	0	0¾		
Coal	0	2¾		
Slate	0	2		
Coal (to slate floor)	0	2	4	8½

This coal is 210 feet over the Eagle Coal at this point.

Rowland Land Company Prospect—No. 149B on Map II.

On south side of Clear Fork, 1.8 miles west of Artie; **Alma Coal**; elevation, 2050′ B.

			Ft.	In.
Draw slate (with sandstone roof)			0	2½
Coal, impure	0′	5 ″		
Slate	0	0¼		
Coal, gas	3	9		
Slate	0	2		
Coal, gas (to slate floor)	0	2½	4	6¾

This opening is 225 feet over the Eagle Coal at this point.

Rowland Land Company Prospect—No. 149C on Map II.

On south side of Clear Fork, 2.2 miles west of Artie; **Alma Coal**; elevation, 2000′ B.

			Ft.	In.
Coal (with shale roof)	0′	0½″		
Slate	0	7		
Coal	0	1		
Slate	0	1		
Coal, gas	3	8		
Slate	0	1½		
Coal	0	3		
Slate	0	1		
Coal	0	2¼	5	1¼

Marsh Fork District, Raleigh County.

The Rowland Land Company has made a number of prospect openings on the Alma Coal in the development of their lands in Raleigh County, on what was called the "Peerless" bed by their engineers, Messrs. Edwards and Colcord. The coal has been mined on the head of Drews Creek for local fuel, where the following section was obtained by Krebs:

Rowland Land Company Prospect—No. 150 on Map II.

On head of Drews Creek, just north of trail leading from creek to Pond Fork; **Alma Coal**; elevation, 2230′ B.; butts, N. 40° W.; faces, N. 50° E.

				Ft.	In.
1.	Gray shale roof				
2.	**Coal**, gas	3′	0″		
3.	Shale, dark	2	6		
4.	**Coal**, gas	2	2		
5.	Shale	0	4		
6.	**Coal**, splint	1	4		
7.	Slate, gray	0	1		
8.	**Coal**	0	1		
9.	Slate, gray	0	1		
10.	**Coal**	0	2		
11.	Shale	0	8		
12.	**Coal**, gas (to slate floor)	3	8	14	1

The composition of a sample (453-K) collected from Nos. 6 and 12 is published under **No. 150** in the table of coal analyses at the end of this Chapter.

Rowland Land Company Opening—No. 151 on Map II.

On head of Falling Rock Branch of Drews Creek, 3.8 miles southwest of Citie P. O.; **Alma Coal**; butts, N. 40° W.; faces, N. 50° E.; elevation, 2300′ B.

			Ft.	In.
Coal, gas (shale, gray, roof)..	2′	9″		
Slate	1	0		
Coal, gas	2	3		
Slate	0	4		
Coal	0	9		
Slate	0	10		
Coal	0	8		
Slate	0	0½		
Coal	0	3		
Slate	0	4		
Coal, gas (to slate floor).....	3	7	12	9½

Rowland Land Company Opening—No. 151A on Map II.

On Right Fork of Drews Creek, 0.7 mile northeast from Indian Gap; **Alma Coal**; elevation, 2320′ B.; section by Teets.

				Ft.	In.
1.	Slate roof				
2.	**Coal**, gas.....	2′	8″		
3.	Slate, gray	1	6		
4.	**Coal**, gas.....	2	2		
5.	Slate, gray	0	4		
6.	**Coal**, block	1	5		
7.	Slate, black.....	0	2		
8.	**Coal**, visible.....	3	1	11	4

The composition of a sample (211-T) collected from Nos. 2, 4, 6 and 8 as reported by Messrs. Hite and Krak is given in the table of coal analyses under **No. 151A.**

Rowland Land Company Opening—No. 151B on Map II.

On the head of Left Fork of Drews Creek, 1.0 mile due east from Indian Gap; **Alma Coal**; elevation, 2300′ B.; section by Teets.

				Ft.	In.
1.	Slate roof.....				
2.	**Coal**, gas.....	2′	6″		
3.	Slate	1	7		
4.	**Coal**	2	0		
5.	Slate	0	2		
6.	**Coal**	0	7		
7.	Slate	0	9		
8.	**Coal**, visible.....	2	10	10	5

The composition of a sample (213-T) collected from Nos. 2, 4, 6 and 8 of the above section as reported by Messrs. Hite and Krak is given under **No. 151B** in the table of coal analyses at the end of this Chapter.

Rowland Land Company Prospect—No. 152 on Map II.

On Bluegrass Branch of Drews Creek, S. 10° W. 3.2 miles from Citie; **Alma Coal**; elevation, 2360′ B.; butts, N. 45° W.; faces, N. 45° E.

				Ft.	In.
Coal, gas (with shale roof)....	3′	0″			
Slate	0	7			
Coal, gas	1	6			
Slate	0	2			
Coal, gas (to fire clay floor)...	0	10	.....	6	1

Rowland Land Company Prospect—No. 153 on Map II.

On Canterbury Branch of Drews Creek, S. 60° W. 1.4 miles of Citie; **Alma Coal**; driven in about 10 feet; elevation, 2190′ B.; slate roof and floor.

				Ft.	In.
Coal	0′	0¾″			
Slate	0	0½			
Coal, gas	1	7½			
Slate	0	4½			
Coal, gas	1	6			
Slate	0	4			
Coal	1	3	.....	5	2¼

Rowland Land Company Prospect—No. 154 on Map II.

On Workman Branch of Drews Creek, 1.1 miles west of Citie; **Alma Coal**; driven in 20 feet; elevation, 2200′ B.

				Ft.	In.
Coal, gas (with slate roof)....	2′	2	″		
Slate	0	4			
Coal, gas	1	5			
Slate	0	3			
Coal, gas	1	3½	.....	5	5½

Rowland Land Company Prospect—No. 156 on Map II.

On Left Fork of Horse Creek, N. 30° W. 2.5 miles from Dry Creek P. O.; **Alma Coal**; elevation, 1820′ B.; Slate roof and floor.

				Ft.	In.
Coal, gas	2′	2	″		
Slate	0	3			
Coal, gas	1	5			
Slate	0	0½			
Coal, gas	2	1			
Slate	0	0½			
Coal, gas	1	2	.....	7	2

Prospect opening not fully driven under cover. The upper slate band seems to increase to the east, passing up Horse Creek, as is shown in the following section:

Rowland Land Company Prospect—No. 158 on Map II.

On Log Gap Branch of Horse Creek, 2.6 miles north of Citie; **Alma Coal**; elevation, 1900′ B.; slate roof and floor; butts, N. 40° W.; faces, N. 50° E.

				Ft.	In.
Coal, gas	2′	6″			
Slate	1	2			
Coal, gas	4	4			
Slate	0	3			
Coal	0	1			
Slate	0	1			
Coal	0	1	.....	8	6

Dry Creek flows into Marsh Fork about 2 miles southeast of the mouth of Horse Creek. Three prospects have been made in the Alma seam along that creek, the results of which are as follows:

Rowland Land Company Prospect—No. 159 on Map II.

On head of Clay Branch of Dry Creek, N. 12° E. 1.7 miles from Dry Creek P. O.; **Alma Coal**; elevation, 2115′ B.; butts, N. 40° W.,; faces, N. 50° E.

				Ft.	In.
Coal, gas (with slate roof)	2′	7	″		
Slate	6	0			
Coal, gas	2	11			
Slate	0	1			
Coal, gas	0	8			
Slate	0	1			
Coal, gas	0	8½	.....	13	0½

Rowland Land Company Prospect—No. 160 on Map II.

On head of Sturgeon Fork, N. 30° E. 2.3 miles from Dry Creek P. O.; Alma Coal; driven in about 15 feet; elevation, 2150′ B.

			Ft.	In.
Coal, gas (with slate roof)	3′	2½″		
Slate	0	1		
Coal, gas	0	10		
Slate	0	8		
Coal	0	8½	5	6

Rowland Land Company Prospect—No. 160A on Map II.

On head of Sturgeon Fork, 2.2 miles northeast of Dry Creek P. O.; Alma Coal; elevation, 2185′ B.; section by Teets.

				Ft.	In.
1.	Slate roof				
2.	Coal, gas	0′	2 ″		
3.	Slate, gray	0	0¼		
4.	Coal, gas	0	5		
5.	Slate, gray ¼″ to	0	1		
6.	Coal, gas	2	7		
7.	Slate	0	0¼		
8.	Coal	1	0		
9.	Slate, gray	0	8		
10.	Coal, gas (to slate floor)	0	9	5	8½

The composition of a sample (230-T) collected from Nos. 2, 4, 6, 8 and 10 of the above section as analyzed by Messrs. Hite and Krak is given under **No. 160A** in the table of coal analyses at the end of this Chapter.

Rowland Land Company Prospect—No. 161 on Map II.

On Pond Fork of Dry Creek, N. 40° E. 2.8 miles from Masseysville; Alma Coal; elevation, 2240′ B.; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Coal, gas (with slate roof)	2′	7 ″		
Slate	0	1		
Coal, gas (to slate floor)	0	4½	3	11½

Rock Creek flows into Marsh Fork at Masseysville, 1 mile southeast from the mouth of Dry Creek. Along it, two openings have been made in the Alma seam, with the following results:

Rowland Land Company Opening—No. 162 on Map II.

On Stockingleg Branch of Rock Creek, N. 58° E. 3.0 miles from Masseysville; **Alma Coal**; elevation, 2265′ B.; butts, N. 50° W.; faces, N. 40° E.

			Ft.	In.
Coal (with slate roof)	0′	1½″		
Slate	0	2½		
Coal, gas (to slate floor)	3	1	3	5

Rowland Land Company Prospect—No. 163 on Map II.

On Shot Poach Branch of Rock Creek, N. 27° E. 2.9 miles from Masseysville; **Alma Coal**; elevation, 2455′ B.; butts, N. 48° W.; faces, N. 42° E.

			Ft.	In.
Coal, gas (with slate roof)	2′	6″		
Slate, dark	2	7		
Coal, gas	3	2	8	3

Peachtree Creek flows north from the Guyandot Mountain and empties into Drews Creek at Citie P. O. Along it three prospect openings have been made in the Alma Coal with the following results:

Rowland Land Company Prospect—No. 164 on Map II.

On Board Camp Branch of Martin Fork of Peachtree Creek, S 11° W. 3.0 miles from Citie; **Alma Coal**; elevation, 2340′ B.; butts, N. 48° W.; faces, N. 42° E.

				Ft.	In.
1.	**Coal**, gas(with slate roof)	2′	8″		
2.	Slate	0	6		
3.	**Coal**, gas	1	6		
4.	Slate	0	2		
5.	**Coal** (to slate floor)	0	6	5	4

The analysis of a sample (225-T) collected from Nos. 1, 3 and 5 of above section, as reported by Messrs. Hite and Krak, is published in the first table of coal analyses at the end of this Chapter under **No. 164.**

Rowland Land Company Prospect—No. 165 on Map II.

On Honeycamp Branch of Martin Fork of Peachtree Creek, 3.7 miles S. 8° W. from Citie P. O.; **Alma Coal**; elevation, 2460′ B.

			Ft.	In.
Coal, gas (with slate roof)	2′	6″		
Slate	0	8		
Coal, gas	1	4		
Slate	0	2		
Coal, gas (to slate floor)	0	6	5	2

Rowland Land Company Prospect—No. 166 on Map II.

On the head of Martin Fork of Peachtree Creek, 4.4 miles south of Citie P. O.; **Alma Coal**; elevation, 2600′ B.

			Ft.	In.
Coal, gas (with slate roof)	2′	8½″		
Slate	0	7		
Coal, gas	1	4		
Slate	0	2½		
Coal, gas (to slate floor)	0	4½	5	2½

The foregoing sections indicate that the Alma Coal bed is important in Clear Fork and Marsh Fork Districts in Raleigh County.

Quantity of Alma Coal Available.

Based on the evidence of the preceding pages and with a determination of the area calculated by Teets with planimeter, the following estimate is made of the probable amount of the Alma Coal:

Probable Amount of Alma Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	3	22	14,080	1,839,974,400	73,598,976
Marsh Fork	4	40	25,600	4,460,544,000	178,421,760
Totals		62	39,680	6,300,518,400	252,020,736

THE CAMPBELL CREEK (NO. 2 GAS) COAL.

The Campbell Creek (No. 2 Gas) Coal is one of the most important coal beds in Clear Fork and Marsh Fork Districts, Raleigh County. It has not yet been mined on a commercial scale, but a great many prospect openings have been made to prove its thickness.

Clear Fork District, Raleigh County.

The Campbell Creek (No. 2 Gas) Coal is being mined on Cabin Creek, at Kayford, Carbon, Wevaco and Republic, just north of the Raleigh-Kanawha Line, and some of the mine workings extend within ½ mile of the line of Clear Fork District. The coal varies in thickness from 4′ 6″ to 6′ 6″ in these mines. Sections and composition of the coal in these mines are given in the detailed Report on Kanawha County, pages 544-550.

A few openings have been made in Clear Fork District but at present there are no commercial mines operating in this seam.

Four States Coal & Coke Co. Prospect—No. 167 on Map II.

At Dorothy, on incline; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1429′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	11″		
Slate	0	1		
Coal, gas	0	10		
Coal, impure (to shale floor)	1	0	3	10

Four States Coal & Coke Co. Opening—No. 168 on Map II.

On south side of Clear Fork, about 1 mile southwest from above opening; **Campbell Creek (No. 2 Gas) Coal**; driven under cover 35 feet; elevation, 1385′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2′	9 ″		
Slate	0	6		
Coal, gas (to slate floor)	0	9½	4	0½

Farther up Clear Fork, on the west side of Panther Branch, the following section was obtained:

Four States Coal & Coke Co. Opening—No. 169 on Map II.

On south side of Clear Fork, ½ mile southeast from Dorothy; **Campbell Creek (No. 2 Gas) Coal**; driven in 10 feet; elevation, 1530′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	3′	2″		
Coal, impure (to slate floor)	0	5	3	7

On up Clear Fork, the Campbell Creek (No. 2 Gas) Coal rises faster than the bed of the stream, and appears high in the hills. Very little prospect work has been done in proving this bed of coal in Clear Fork District.

Perfection Coal & Coke Co. Prospect—No. 170 on Map II.

On Dow Fork of Long Branch of Clear Fork, N. 60° E. 2.2 miles from Colcord; **Campbell Creek (No. 2 Gas) Coal**; driven in 10 feet; butts, N. 40° W.; faces, N. 50° E.; elevation, 1770′ B.

			Ft.	In.
Shale, gray			6	0
Coal, gas	1′	2″		
Coal, impure	0	4		
Coal, gas	2	6		
Coal, splint	2	0		
Shale, gray	0	2		
Coal, splint	1	2		
Shale	0	4		
Coal	0	3		
Slate	0	1		
Coal, splint	1	4		
Coal, gas (to slate floor)	2	6	11	10

The above section shows an unusual thickness, and may possibly represent the union of both the Alma and the Campbell Creek (No. 2 Gas) beds.

Farther up Clear Fork on Whiteoak Creek, Mr. Teets reports the measurements of several prospects in the Campbell Creek (No. 2 Gas) bed on the property of the Solvay Collieries Company as follows:

Solvay Collieries Co. Prospect—No. 171 on Map II.

On the east side of Bear Hollow of Fulton Creek, 3.6 miles north of Clear Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; driven in 10 feet; elevation, 2050′ B.; section by Teets; butts, N. 61° W.; faces, N. 29° E.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	9″		
Slate, dark	0	1		
Coal, weathered (to slate floor)	4	2	5	0

Solvay Collieries Co. Prospect—No. 172 on Map II.

On the fork ridge of Big Branch of Whiteoak Creek, 3.3 miles north of Clear Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; driven in 15 feet; elevation, 2115′ B.; section by Teets; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	9 ″		
Slate, dark	0	0½		
Coal, gas	0	10		
Slate, dark	0	1		
Coal, block (to slate floor)	2	10	4	6½

Solvay Collieries Co. Prospect—No. 173 on Map II.

On the west side of Lick Branch of Whiteoak Creek, 3.0 miles north of Clear Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2280′ B.; section by Teets; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast.

	Ft.	In.
Coal, gas, visible (with sandstone roof)	2	2

Solvay Collieries Co. Prospect—No. 174 on Map II.

On the head of Whiteoak Creek, 3.6 miles northeast from Clear Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2285′ B.; section by Teets; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast.

	Ft.	In.
Coal, gas, visible (with slate roof)	2	3

The Willis Branch Coal Company has recently made several prospect openings on Paint Mountain, just north of the Kaleigh-Fayette County Line, where the following section was measured by Krebs:

Willis Branch Coal Co. Prospect—No. 175 on Map II.

On Paint Mountain, 1.5 miles west of Herberton, Fayetteville District, Fayette County, and 0.3 mile north of the Fayette-Raleigh County Line; **Campbell Creek (No. 2 Gas) Coal**; driven under cover 10 feet; elevation, 2620′ B.; section by Krebs; butts, N. 60° W.; faces, N. 30° E.

			Ft.	In.
Shale, dark (with sandstone roof)			1	0
Coal, gas	0′	2″		
Shale, dark	0	1		
Coal, gas	1	3		
Shale, dark, mixed with coal	0	6		
Coal, gas (to slate floor)	2	7	4	7

Rowland Land Company Prospect—No. 176 on Map II.

On Toney Fork of Clear Fork, 2.5 miles N. 85° E. from Clear Creek P. O; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2385′ B.; section by W. P. Edwards; butts, N. 60° W.; faces, N. 30° E.

			Ft.	In.
Coal, gas, (with slate roof)	2′	0 ″		
Slate	0	10½		
Coal, gas	0	7		
Slate	0	2		
Coal, gas (to slate floor)	2	9	6	4½

Near the head of McDowell Branch, west of Clear Fork, the following section was obtained:

Rowland Land Company Prospect—No. 177 on Map II.

On head of McDowell Branch of Clear Fork, S. 70° W. 1.7 miles from Clear Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2240′ B.; section by Teets; butts, N. 60° W.; faces, N. 30° E.

Coal (with slate roof and floor)..... 2 Ft. 11 In.

Another opening on the head of Boyd Branch is reported by Krebs as follows:

Rowland Land Company Prospect—No. 178 on Map II.

On head of Boyd Branch of Clear Fork, S. 50° W. 1.8 miles from Artie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2010′ B.; section by Teets; butts, N. 60° W.; faces, N. 30° E.

Coal, gas, visible (with sandstone roof)..... 3 Ft. 0 In.

Rowland Land Company Prospect—No. 179 on Map II.

On head of Raines Fork of Sycamore Ceek, 2.8 miles southeast of Colford; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2050′ B.; section by Krebs; butts, N. 50° W.; faces, N. 40° E.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	9½″		
Slate	0	0½		
Coal, gas	0	9		
Slate	0	10½		
Coal, impure (to slate floor)	0	3½	3	9

Rowland Land Company Prospect—No. 180 on Map II.

On Right Fork of Sycamore Creek, 2.6 miles south of Colcord; **Campbell Creek (No. 2 Gas) Coal**; driven in 10 feet; butts, N. 50° W.; faces N. 40° E.; elevation, 2000′ B.

			Ft.	In.
Coal, gas (with slate roof)	1′	9½″		
Slate	5	0		
Coal (to slate floor)	0	3	7	0½

The Rowland Land Company has recently opened the Campbell Creek (No. 2 Gas) Coal on Sycamore Creek, near Colcord, and F. C. Colcord, engineer, reports the following sections:

Rowland Land Company Prospect—No. 180A on Map II.

On east side of Sycamore Creek, S. 60° E. 2.5 miles from Colcord; section by F. C. Colcord; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2030′ B.

			Ft.	In.
Coal (with shale roof)	0′	1½″		
Fire clay	0	2		
Coal	0	1½		
Fire clay	0	0½		
Coal, gas	3	4½		
Slate	0	4		
Coal (to slate floor)	0	3½	4	5½

Rowland Land Company Prospect—No. 180B on Map II.

On head of Stover Fork of Sycamore Creek, S. 50° E. 3.1 miles from Colcord; section by F. C. Colcord; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2080′ B.

	Ft.	In.
Fire clay with coal streaks (with shale roof)	1	3
Coal, gas (to slate floor)	3	6½

This prospect is 40 feet under the Alma Coal at this point.

Marsh Fork District, Raleigh County.

The Campbell Creek (No. 2 Gas) Coal covers a large area in Marsh Fork District, and is one of the very important coals of this district. On Clear Fork, below Dorothy, the following openings were made by the Four States Coal & Coke Company on their property:

Four States Coal & Coke Co. Prospect—No. 181 on Map II.

On south side of Clear Fork, ¾ mile west of Dorothy; **Campbell Creek (No. 2 Gas) Coal**; opening driven in 31 feet; elevation, 1375' B.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2'	9 "		
Slate	0	4¼		
Coal, gas (to slate floor)	0	6	3	7¼

Four States Coal & Coke Co. Opening No. 15—No. 182 on Map II.

On south side of Clear Fork, 1,500 feet west of Opening No. 181; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1380' B.; driven in 44 feet; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2'	9½"		
Slate	0	3½		
Coal (to slate floor)	0	7½	3	8½

Another opening, 0.6 mile southwest of No. 182, gives the following section:

Four States Coal & Coke Co. Opening No. 16—No. 182A on Map II.

On Crawford Branch of Low Gap Branch of Little Marsh Fork, 0.3 mile northeast from Emerson; **Campbell Creek (No. 2 Gas) Coal**; driven in 10 feet; elevation, 1410' B.; section by W. P. Edwards; butts, N. 48° W.; faces, N. 42° E.

			Ft.	In.
Coal, gas (with slate roof)	3'	1¾"		
Coal, gas (to slate floor)	0	9½	4	4½
Slate	0	5¼		

Four States Coal & Coke Co. Prospect—No. 183 on Map II.

On Crawford Branch of Low Gap Branch of Little Marsh Fork, ½ mile northeast of Emerson; **Campbell Creek (No. 2 Gas) Coal**; driven under cover 50 feet; elevation, 1410′ B.; section by W. P. Edwards; butts, N. 48° W.; faces, N. 42° E.

			Ft.	In.
Coal, gas (with slate roof)	2′	9¼″		
Slate	0	0¾		
Coal, gas (to slate floor)	0	8	3	6

Southwestward across Marsh Fork in Steer Hollow, Krebs obtained the following section:

Rowand Land Company Prospect—No. 184 on Map II.

On south side of Steer Hollow of Marsh Fork, S. 25° W. 2.2 miles from Jarrolds Valley; **Campbell Creek (No. 2 Gas Coal**; butts, N. 80° W.; faces, N. 10° E.; elevation, 1125′ B.

			Ft.	In.
Coal, gas (with slate roof)	0′	2½″		
Slate	0	2		
Coal, gas	2	3		
Slate	0	3		
Coal, gas	1	1½		
Slate	0	1		
Coal, gas (to slate floor)	0	4½	4	5½

Rowland Land Company Prospect—No. 185 on Map II.

On north side of Lower Big Branch of Marsh Fork, S. 20° W. 3.2 miles from Jarrolds Valley; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1220′ B.; butts, N. 75° W.; faces, N. 15° E.

			Ft.	In.
Coal, gas (with shale roof)	2′	5½″		
Slate	0	5		
Coal, gas	1	1½		
Slate	0	0½		
Coal, gas (to slate floor)	0	4	4	4½

On Upper Big Branch, Teets obtained the following results:

Rowland Land Company Prospect—No. 186 on Map II.

On Upper Big Branch, 3.6 miles south of Jarrolds Valley; **Campbell Creek (No. 2 Gas) Coal**; driven in 15 feet; butts, N. 80° W.; faces, N. 10° E.; elevation, 1250′ B.

			Ft.	In.
Coal, gas (with shale roof)	2′	7 ″		
Slate	0	1½		
Coal, gas	1	1½		
Slate	0	0½		
Coal, gas (to slate floor)	1	1	4	11½

Rowland Land Company Prospect—No. 187 on Map II.

On Big Branch of Marsh Fork, 2.3 miles north 10° west of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1245′ B.; butts, N. 79° W.; faces, N. 11° E.; greatest rise, southeast; slaty shale roof and slate floor; section by Teets.

				Ft.	In.
1.	**Coal**, gas, blocky	2′	5 ″		
2.	**Coal**, impure	0	2		
3.	**Coal**, harder	1	0½		
4.	Slate	0	0½		
5.	**Coal**	1	0	4	8

The analysis of a sample (204-T) collected from Nos. 1, 3 and 5 of the above prospect is published under **No. 187** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 188 on Map II.

On west side of Marsh Fork, 1.2 miles north of mouth of Hazy Creek, and 4.7 miles south of Jarrolds Valley; **Campbell Creek (No. 2 Gas Coal**; butts, N. 75° W.; faces, N. 15° E.; elevation, 1375′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	5¾″		
Slate	0	0¼		
Coal, gas	1	3½		
Slate	0	4		
Coal, gas	0	5		
Slate	0	1½		
Coal, gas (to slate floor)	0	10½	5	6½

Rowland Land Company Prospect—No. 189 on Map II.

On Boardtree Branch of Hazy Creek, 0.9 mile west of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1410′ B.; butts, N. 76° E.; faces, N. 14° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas, glossy (with sandstone roof)	2′ 3″		
2.	Slate, gray	0 0¾		
3.	**Coal**	0 3		
4.	Slate	0 0¼		
5.	**Coal**, hard, block	1 0½		
6.	Slate	0 7½		
7.	**Coal**, hard, block (to slate floor)	1 7	5	10

The analysis of a sample (206-T) collected from Nos. 1, 3, 5 and 7 of above section is published under No. 189 in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 190 on Map II.

On Road Fork of Hazy Creek, 6 miles south of Jarrolds Valley; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1400′ B.; butts, N. 65° W.; faces N. 25° E.; section by Teets.

		Ft.	In.
Coal, gas (with shale roof)	2′ 7¾″		
Slate	0 1½		
Coal, gas	1 1		
Slate	0 3½		
Coal	0 4		
Slate	0 0¼		
Coal, gas (to slate floor)	1 4	5	10

Rowland Land Company Prospect—No. 191 on Map II.

On Hazy Creek, S. 27° W. 1.9 miles from Launa; **Campbell Creek No. 2 Gas) Coal**; elevation, 1645′ B.; butts, N. 65° W.; faces, N. 25° E.; section by Teets.

		Ft.	In.
Coal, gas (with shale roof)	0′ 8″		
Slate	0 8		
Coal	1 1		
Slate	0 2½		
Coal (to slate floor)	0 2½	5	8

Rowland Land Company Prospect—No. 192 on Map II.

On Sugarcamp Branch of Marsh Fork, 0.8 mile south of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1585′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	2′	9 ″		
Slate	0	1		
Coal	0	0½		
Slate	0	6		
Coal, gas	1	4	4	8½

Rowland Land Company Prospect—No. 193 on Map II.

On Right Fork of Shumate Creek, 1.2 miles south 5° east from Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1660′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	0′	8 ″		
Shale	0	6		
Coal, gas	3	2½		
Shale	3	9		
Coal, gas	1	5	9	6½

Rowland Land Company Prospect—No. 194 on Map II.

On west side of Shumate Creek, 1.5 miles southeast from Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1660′ B.; mined for local fuel by **Greene Clay**; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

				Ft.	In.
1.	**Coal**, gas (with gray shale roof)	0′	6″		
2.	Shale, gray	6	0		
3.	Shale, dark plant fossils	1	0		
4.	**Coal**, splinty, gas	1	0		
5.	Shale, gray	0	6		
6.	**Coal**, gas (to slate floor)	3	6	12	6

The analysis of a sample (451-K) collected from Nos. 4 and 6 of above section is published under **No. 193** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 195 on Map II.

On east side of Shumate Creek, 1.5 miles southeast of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1935′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	8½″		
Slate	0	2		
Coal, gas	1	7		
Slate	0	1		
Coal, gas (to slate flor)	1	11¼	5	5¾

Another opening on Shumate Creek was measured by Krebs as follows:

Rowland Land Company Prospect—No. 196 on Map II.

On east side of Shumate Creek, 1.7 miles southeast of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2040′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast.

			Ft.	In.
Shale (with sandstone roof)			0	7½
Coal, gas	1′	8 ″		
Slate	0	1		
Coal, gas	1	6½		
Slate	0	3		
Coal, gas (to slate floor)	1	5	4	11½

East of Marsh Fork, the following section was measured by Krebs:

Rowland Land Company Prospect—No. 197 on Map II.

On Ellis Creek, 4.3 miles south from Jarrolds Valley, 0.5 mile east of Hecla; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1510′ B.; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	3¾″		
Slate	0	1¾		
Coal	2	0		
Slate	3	2		
Coal, gas	1	5½		
Slate	0	1½		
Coal	0	1¾		
Slate	0	1		
Coal, gas (to slate floor)	0	11½	9	4¾

Rowland Land Company Prospect—No. 198 on Map II.

On east side of Marsh Fork, opposite the mouth of Hazy Creek, 0.5 mile north of Launa; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1540′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast; section by Krebs.

			Ft.	In.
Coal, gas (with sandy shale roof)	2′	11 ″		
Shale	1	8½		
Coal, gas	1	8		
Shale	1	0		
Coal, gas (to slate floor)	0	10	8	1½

Rowland Land Company Prospect—No. 199 on Map II.

On west side of Sturgeon Fork, 2.4 miles N. 30° E. from Citie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 1740′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	3′	1½″		
Slate	0	0½		
Coal	0	1		
Slate	0	0½		
Coal, gas	1	9		
Slate	0	5½		
Coal, gas (to slate floor)	1	0	6	6

Rowland Land Company Prospect—No. 200 on Map II.

On head of Dry Creek, 3 miles northeast of Dry Creek P. O.; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2175′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

	Ft.	In.
Coal, gas (with sandstone roof and slate floor)	2	3

Rowland Land Company Prospect—No. 201 on Map II.

On Canterbury Branch of Drews Creek, 1.4 miles southwest of Citie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2160′ B.; butts, 62° W.; faces, N. 28° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, gas (with slate roof and floor)	3	7

Rowland Land Company Prospect—No. 202 on Map II.

On the north side of Canterbury Branch of Drews Creek, 1.1 miles west of Citie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2195′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	7″		
Slate, gray	0	4		
Coal, visible	0	10	2	9

Rowland Land Company Prospect—No. 203 on Map II.

On south side of Spring Branch of Drews Creek, S. 35° W. 2.1 miles from Citie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2115′ B.; butts, N. 55° W.: faces, N. 35° E.; greatest rise, southeast; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	0′	9 ″		
Slate	0	8½		
Coal	0	1		
Slate	0	4		
Coal, gas (to slate floor)	3	7	5	5½

Another opening was measured by Krebs, on the east side of Drews Creek on Bluegrass Branch, as follows:

Rowland Land Company Prospect—No. 204 on Map II.

On east side of Drews Creek, 3.1 miles southwest of Citie; **Campbell Creek (No. 2 Gas) Coal**; butts, N. 50° W.; faces, N. 40° E.

			Ft.	In.
Coal, gas (with slate roof)	0′	7 ″		
Slate	0	2½		
Coal	0	1		
Slate	0	4½		
Coal (to slate floor)	3	6	4	9

Rowland Land Company Prospect—No. 205 on Map II.

On the head of Boardtree Branch of Martin Fork of Peachtree Creek, 3.6 miles south of Citie; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2305′ B.; butts, N. 53° E.; faces, N. 37° W.; greatest rise, southeast.

			Ft.	In.
Coal (with slate roof)	0′	10″		
Slate	0	3		
Coal, visible	2	10	3	11

Rowland Land Company Prospect—No. 206 on Map II.

Near mouth of Honeycamp Branch of Martin Fork of Peachtree Creek, 1.7 miles south of Citie; **Campbell Creek (No. 2 Gas) Coal;** elevation, 2415′ B.; butts, N. 55° W.; faces, N. 35° E.

			Ft.	In.
Coal, gas (with slate roof)	0′	8″		
Coal, impure	0	2		
Coal, gas, visible	3	8	4	6

Rowland Land Company Prospect—No. 207 on Map II.

On head of Martin Fork of Peachtree Creek, 2 miles west of Redbird; **Campbell Creek (No. 2 Gas) Coal;** elevation, 2550′ B.; butts, N. 55° W.; faces, N. 35° E.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof	0′	9 ″		
Slate	0	3		
Coal, gas (to slate floor)	3	4½	4	4½

Rowland Land Company Prospect—No. 208 on Map II.

On head of Peachtree Creek, 1 mile west of Redbird, just north of Guyandot Mountain; **Campbell Creek (No. 2 Gas) Coal;** elevation, 2680′ B.; butts, N. 55° W.; faces, N. 35° E.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	0′	3″		
Slate	0	4		
Coal, gas	2	11	3	6

Rowland Land Company Prospect—No. 209 on Map II.

On the head of Stockingleg Branch of Rock Creek, 3.3 miles northeast of Masseysville; **Campbell Creek (No. 2 Gas) Coal, Lower Bench;** elevation, 2225′ B.; butts, N. 50° W.; faces, N. 40° E.; section by Teets.

	Ft.	In.
Coal, gas, visible (with slate roof)	3	2

Rowland Land Company Prospect—No. 210 on Map II.

On Shot Poach Branch of Rock Creek, 4 miles northeast from Masseysville; **Campbell Creek (No. 2 Gas) Coal;** elevation, 2415′ B.; butts, N. 48° W.; faces, N. 42° E.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	3	5

PLATE XIX.—Topography of New River Group on Winding Gulf near Winding Gulf Station.

Rowland Land Company Opening—No. 210A on Map II.

On head of Rock Creek, 3.0 miles due north of Dameron; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2510′ B.; section by Teets.

			Ft.	In.
1.	Sandstone roof.....			
2.	**Coal**, gas, columnar.....	2′ 1″		
3.	Slate, dark.....	0 1		
4.	**Coal**, gas, visible.....	1 0	3	2

The composition of a sample (238-T) collected from Nos. 2 and 4 of above section, as reported by Messrs. Hite and Krak, is published under mine **No. 210A** in the table of analyses at the end of this Chapter.

Rowland Land Company Prospect—No. 211 on Map II.

On Price Fork of Righthand Fork of Rock Creek, 1.7 miles north of Dameron; **Campbell Creek (No. 2 Gas) Coal**; elevation, 2475′ B.; butts, N. 45° W.; faces, N. 45° E.; section by Teets.

		Ft.	In.
Coal, gas (with slate roof.....	4′ 4″		
Slate	0 7		
Coal (to slate floor).....	0 10	5	9

Quantity of Campbell Creek (No. 2 Gas) Coal Available.

The Campbell Creek (No. 2 Gas) Coal occupies a portion of Clear Fork and Marsh Fork Districts. The following table shows the probable amount of the Campbell Creek (No. 2 Gas) Coal in Raleigh County. The acreage was determined with planimeter from Map II, by Teets, and the thickness for each district is based on evidence from the preceding pages:

Probable Amount of Campbell Creek (No. 2 Gas) Coal.

Raleigh County by Districts	Thickness of Coal Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork.....	3	25.2	16,128	2,107,607,040	84,304,282
Marsh Fork.....	4	42.3	27,072	4,717,052,280	188,681,011
Totals		67.5	43,200	6,824,659,320	272,985,293

THE POWELLTON COAL.

The Powellton Coal occurs of minable thickness in a portion of Clear Fork and Marsh Fork Districts of Raleigh County, where it has been prospected. However, very little work has been done to prove its thickness or purity within these districts.

Clear Fork District, Raleigh County.

The Solvay Collieries Company has prospected several places on its property, west of Clear Fork, for the Powellton Coal. The following are the detailed sections of the coal on their property, as measured by Teets:

Solvay Collieries Co. Prospect—No. 212 on Map II.

On the north side of Left Fork of Whiteoak Creek, 3.8 miles north of Clear Creek P. O.; **Powellton Coal**; elevation, 1980′ B.; butts, N. 50° E.; faces, N. 40° W.

	Ft.	In.
Coal, weathered (with slate roof and floor).....	3	9

Solvay Collieries Co. Prospect—No. 213 on Map II.

On a branch of Left Fork of Whiteoak Creek, 3.1 miles north of Clear Creek P. O.; **Powellton Coal**; elevation, 2045′ B.; butts, N. 50° E.; faces, N. 40° W.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with shale roof).....	1′	2″		
Slate, gray.....	0	7		
Coal	0	3		
Slate, dark.....	0	1		
Slate, gray.....	0	2		
Coal	0	1		
Slate, gray.....	0	2		
Coal, gas (to slate floor).....	1	4	3	10

Solvay Collieries Co. Prospect—No. 214 on Map II.

On Lick Branch of Whiteoak Creek, 3.1 miles northeast of Clear Creek P. O.; **Powellton Coal**; elevation, 2130′ B.; butts, N. 80° E.; faces, N. 10° W.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with shale roof).....	1′	3″		
Slate, gray.....	1	2		
Coal, block.....	0	2		
Coal, gas.....	1	8		
Slate, gray.....	0	6		
Coal, gas, visible.....	3	1	7	10

Solvay Collieries Co. Prospect—No. 215 on Map II.

On head of Whiteoak Creek, 3.5 miles northeast from Clear Creek P. O.; **Powellton Coal**; elevation, 2185′ B.; butts, N. 75° E.; faces, N. 15° W.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with shale roof)	2′	2″		
Slate, gray	0	9		
Coal, gas, visible	0	6	3	5

Solvay Collieries Co. Prospect—No. 216 on Map II.

On the west side of Rock Hollow of the Left Fork of Whiteoak Creek, 3.6 miles north of Clear Creek P. O.; **Powellton Coal**; elevation, 1970′ B.; butts, N. 50° E.; faces, N. 40° W.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with slate roof)	0′	10″		
Slate, gray	0	4		
Coal, hard	0	11		
Slate, dark	1	0		
Coal, gas (to slate floor)	0	9	3	10

Solvay Collieries Co. Prospect—No. 217 on Map II.

On the head of Taylor Lick Hollow of the Left Fork of Whiteoak Creek, 3.4 miles north of Clear Creek P. O.; **Powellton Coal**; elevation, 1975′ B.; butts, N. 49° W.; faces, N. 41° E.; greatest rise, southeast.

	Ft.	In.
Coal, soft (with sandstone roof)	3	9

Marsh Fork District, Raleigh County.

As far as prospected, the Powellton Coal appears thin in this district. A few sections were measured as follows:

Rowland Land Company Prospect—No. 219 on Map II.

On the head of Dry Creek, 2.7 miles northeast of Masseysville; section by Teets; **Powellton Coal**; elevation, 2085′ B.; butts, N. 55° W.; faces, N. 35° E.; greatest rise, southeast.

				Ft.	In.
1.	**Coal**, gas (with sandstone roof)	1′	2 ″		
2.	Slate, black	0	0¼		
3.	**Coal** (to slate floor.)	0	9¾	2	0

The analysis of a sample (231-T) collected from Nos. 1 and 3 of above section is published under No. 219 in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 220 on Map II.

On the head of Dry Creek, 2.7 miles northeast of Masseysville; section by Teets; **Powellton Coal**; elevation, 2185' B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast.

	Ft.	In.
Coal (with slate roof and floor).....	2	3

Rowland Land Company Prospect—No. 221 on Map II.

On Spring Branch of Drews Creek, S. 20° W. 2.2 miles from Citie; section by Krebs; **Powellton Coal**; elevation, 2005' B.; butts, N. 60° W.; faces, N. 30° E.

		Ft.	In.
Coal, gas (with sandstone roof)	1' 10"		
Coal, splint (to slate floor).....	0 10	2	8

Quantity of Powellton Coal Available.

Based on the evidence of the preceding pages and from the location of the different openings, the following estimate is made of the probable amount of Powellton Coal:

Probable Amount of Powellton Coal.

Raleigh County by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork.....	3' 6"	10	6,400	975,744,000	39,029,760
Marsh Fork.....	2' 6"	6	3,840	418,476,000	16,739,040
Totals		16	10,240	1,394,220,000	55,768,800

THE MATEWAN COAL.

Very little prospecting has been done for this bed of coal in Raleigh County, but from the general sections already given on preceding pages of this Report, it will be noted that

this coal is of minable thickness throughout a portion of Clear Fork and Marsh Fork Districts. In the section 1 Mile Southeast of Launa, the thickness is given as 2 feet; in the section 2.5 Miles Southwest of Citie, the thickness is given as 3 feet; in the section 3.5 Miles Southwest of Launa, the coal appears to be 2 feet 2 inches thick; while the coal shows a thickness of 3 feet in the section 1 Mile Northwest of Redbird, and 2 feet in the section 1.3 Miles Northwest of Hecla, and 2 feet 8 inches in the one 2 Miles Southwest of Citie. The foregoing sections show that the coal is of minable thickness in a portion of Clear Fork and Marsh Fork Districts, but owing to a lack of development of the bed, so that accurate measurements could be taken, no estimate of the minable coal will be made. The following are two openings in this bed in **Marsh Fork District** measured by Teets:

Rowland Land Company Prospect—No. 218 on Map II.

On the north side of Canterbury Branch of Drews Creek, 1.2 miles southwest of Citie; **Matewan Coal**; elevation, 2160′ B.; butts, N. 87° W.; faces, N. 3° E.; greatest rise, southeast.

	Ft.	In.
Coal, hard, blocky (with sandstone roof and slate floor)	2	8

Rowland Land Company Prospect—No. 294 on Map II.

On the head of Sturgeon Fork of Dry Creek, 2.3 miles northeast of Dry Creek; **Matewan Coal**; elevation, 2025′ B.; butts, N. 57° W.; faces, N. 33° E.; greatest rise, southeast.

	Ft.	In.
Shale, gray		
Slate, dark	1	0
Slate, cannelly, **marine fossils**	0	10
Coal, gas 0′ 10″		
Coal, columnar 1 10		
Coal, gas (to slate floor) 1 2	3	10

THE EAGLE COAL.

The Eagle is the next lower bed of coal of commercial thickness and purity to be minable in Raleigh County. It is probably the most important commercial bed in Clear Fork

and Marsh Fork Districts. A number of prospect openings have been made to test this seam. No commercial mines have been developed in it yet.

Clear Fork District, Raleigh County.

The Eagle Coal comes about 160 feet above the bed of Clear Fork at the western point of Raleigh County, on the Raleigh-Boone County Line, and rising faster than the bed of Clear Fork to the eastward at Clear Creek P. O., the coal is more than 700 feet above the bed of the creek. A few sections of it will be given as follows:

Four States Coal & Coke Co. Prospect—No. 222 on Map II.

At Dorothy, 600 feet west of new gravity incline; **Eagle Coal**; elevation, 1235′ B.; butts, N. 60° W.; faces, N. 30° E.; driven in about 20 feet; section by Krebs.

			Ft.	In.
1.	Shale, dark (with sandstone cover)		0	11
2.	**Coal**, gas	0′ 10″		
3.	Slate	0 1		
4.	**Coal**, gas (to slate floor)	3 2	4	1

The analysis of a sample (462-K) collected from Nos. 2 and 4 of above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 222.**

Robson & Prichard Prospect—No. 223 on Map II.

On Laurel Branch of Clear Fork, 1.7 miles northeast of Dorothy; **Eagle Coal**; elevation, 1270′ B.; butts, N. 61° W.; faces.; N. 29° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal, hard, block (with sandstone roof)	1′ 5″		
Coal, splint	0 3		
Coal, gas (to slate floor)	1 1	2	9

The composition of a sample (246-T) collected from the entire section of the above opening, as reported by Messrs. Hite and Krak, is given under **No. 223** in the table of coal analyses at the end of this Chapter.

Robson & Prichard Prospect—No. 224 on Map II.

On Gardner Branch of Clear Fork, 0.5 mile north of Dorothy; **Eagle Coal**; elevation, 1230′ B.; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, visible (with sandstone roof).....	1	6

Rowland Land Company Prospect—No. 225 on Map II.

On east side of Sycamore Creek, S. 45° E. ½ mile from Colcord; **Eagle Coal**; elevation, 1545′ B.; section by F. C. Colcord.

				Ft.	In.
Coal, gas (with shale roof)...	0′	3	″		
Slate	0	3			
Coal, gas.....	2	4½			
Shale and sandstone.....15		1			
Slate	0	3			
Coal (to slate floor).....	2	4	.....	20	6½

It will be noted that there is a shale and sandstone parting of 15′ 4″ between the two benches of coal. In traveling to the west, it will be shown by sections of this bed that this shale and sandstone thin out and disappear so that the two benches are united.

Rowland Land Company Prospect—No. 226 on Map II.

On east side of Sycamore Creek, S. 30° E. 1 mile from Colcord; **Eagle Coal**; elevation, 1650′ B.; section by F. C. Colcord.

				Ft.	In.
Slate with coal streaks (shale roof).....				0	5
Coal, gas	0′	3¼″			
Slate	0	2¾			
Coal, gas.....	2	3½			
Sandstone and shale.....10		2			
Shale	0	10			
Coal (to slate floor).....	1	5	.....	15	2½

Rowland Land Company Prospect—No. 227 on Map II.

On north side of Speed Branch of Clear Fork, 1.0 mile southwest from Colcord; **Eagle Coal**; elevation, 1500′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	3½″		
Slate	0	2½		
Coal, gas	2	4		
Shale and sandstone	8	6		
Slate	0	2		
Coal, gas (to slate floor)	2	5½	13	11½

It will be noted that in a little more than one mile to the west from opening No. 225, the shale and sandstone partings have decreased from 15′ 4″ to 8′ 8″.

Rowland Land Company Prospect—No. 228 on Map II.

On south side of Clear Fork, S. 70° E. 2.2 miles from Colcord; **Eagle Coal**; elevation, 1760′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	1′	8 ″		
Slate	0	3½		
Fire clay	0	4½		
Coal, gas	2	4	4	8

Rowland Land Company Prospect—No. 229 on Map II.

On south side of Clear Fork, S. 68° E. 2.4 miles from Colcord; **Eagle Coal**; elevation, 1765′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	1½″		
Slate	0	2½		
Coal, gas	2	2		
Shale and sandstone	10	0		
Coal, gas	1	10		
Slate	0	0¾		
Coal, gas	2	3	16	7¾

Northeast 0.4 mile from Opening No. 229, the following section was measured:

Rowland Land Company Prospect—No. 230 on Map II.

On south side of Clear Fork, S. 75° E. 2.6 miles from Colcord; **Eagle Coal**; elevation, 1800′ B.; section by F. C. Colcord.

			Ft.	In.
Slate			0	10
Coal	0′	3 ″		
Slate	0	2½		
Coal, gas	2	5		
Shale	8	6		
Coal, impure	0	1½		
Coal, gas (to slate floor)	4	1½	15	7½

Rowland Land Company Prospect—No. 231 on Map II.

On south side of Clear Fork, S. 74° E., 3 miles from Colcord; **Eagle Coal**; elevation, 1850′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale floor)	0′	3¼″		
Slate	0	2		
Coal, gas	2	4½		
Shale	7	1		
Slate	0	5		
Coal, gas (to slate floor)	4	2½	14	6¼

Rowland Land Company Prospect—No. 232 on Map II.

On south side of Clear Fork, S. 65° E., 3.2 miles from Colcord; **Eagle Coal**; elevation, 1850′ B.; section by F. C. Colcord.

			Ft.	In.
Coal blossom	1′	8″		
Shale	4	4		
Coal, gas (to slate floor)	4	5	10	5

Southwest across the divide to Stover Fork of Sycamore Creek, the following two sections were obtained by F. C. Colcord:

Rowland Land Company Prospect—No. 233 on Map II.

On head of Stover Fork of Sycamore Creek, S. 60° E., 3.0 miles from Colcord; **Eagle Coal**; elevation, 1850′ B.

			Ft.	In.
Coal, gas (with shale roof)	1′	10 ″		
Slate	0	0½		
Coal, gas	2	0		
Slate	0	0½		
Coal, gas (to slate floor)	0	1½	4	0½

Rowland Land Company Prospect—No. 234 on Map II.

On head of Stover Fork of Sycamore Creek, S. 58° E. 3 miles from Colcord; **Eagle Coal**; elevation, 1850′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	3 ″		
Slate	0	3		
Coal, gas	2	3½		
Shale	11	6		
Coal, gas	1	9		
Slate	0	0½		
Coal, gas (to slate floor)	2	9½	18	10½

North of Clear Fork, a number of openings have been made in the Eagle Coal seam, as follows:

W. Va. Coal Land Co. Prospect—No. 235 on Map II.

On head of Long Branch of Clear Fork, N. 78° E. 2.7 miles from Colcord; **Eagle Coal**; elevation, 1725′ B.; butts, N. 70° W.; faces, N. 20° E.; section by Krebs.

				Ft.	In.
1.	**Coal**, gas (with gray shale roof)	0′	9″		
2.	**Coal**, splint	0	1		
3.	**Coal**, gas	1	2		
4.	**Coal**, gas, splint	1	0		
5.	**Coal**, gas	1	6		
6.	Shale	0	1		
7.	**Coal**, gas (to slate floor)	0	4	4	11

The analysis of a sample (465-K) collected from Nos. 1, 2, 3, 4, 5 and 7 is published under **No. 235** in the table of coal analyses at the end of this Chapter.

W. Va. Coal Land Co. Prospect—No. 237 on Map II.

On west side of Mare Branch of Clear Fork, 2.3 miles west of Colcord; **Eagle Coal**; 60 feet under cover; elevation, 1760′ B.; section by Krebs; butts, N. 80° W.; faces, N. 10° E.; mined for local fuel by **Messrs. Perry and Hodges.**

			Ft.	In.
Coal, gas (with dark gray shale roof)	0′	7″		
Slate, 0″ to	0	1		
Coal, gas	1	0		
Coal, gas, splint	1	0		
Coal, gas (to slate floor)	1	5	4	1

Milburn Coal & Coke Co. Opening—No. 238 on Map II.

On head of Fulton Creek, 2.4 miles north of Artie; **Eagle Coal**; elevation, 1800′ B.; butts, N. 80° W.; faces, N. 10° E.; driven in 80 feet; section by Krebs.

			Ft.	In.
1.	**Coal**, impure (dark gray shale roof)	0′ 4″		
2.	Shale, dark	0 10		
3.	**Coal**, gas	1 10		
4.	Shale, dark	0 1		
5.	**Coal**, gas, hard	3 0		
6.	**Coal**, gas, softer (to slate floor)	2 0	8	1

The coal was mined here for locomotive fuel when the timber was removed from this branch.

The analysis of a sample (447-K) collected from Nos. 3, 5 and 6 of above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 238.**

South of Clear Fork on Boyd Branch, the following section was obtained by Krebs:

Rowland Land Company Prospect—No. 239 on Map II.

On west side of Boyd Branch, S. 60° W. 1.6 miles from Artie; **Eagle Coal**; elevation, 1910′ B.; butts, N. 30° W.; faces, N. 60° E.

			Ft.	In.
	Coal, gray splint (with dark gray shale roof)	0′ 4″		
	Shale, gray	0 1		
	Coal, gray splint	0 8		
	Coal, gas	1 9		
	Shale, gray	2 6		
	Coal, gas	0 6		
	Coal, splint	2 4		
	Coal, gas (to slate floor)	0 2	8	4

Milburn Coal & Coke Co. Opening—No. 240 on Map II.

On north side of Clear Fork, N. 30° W. 0.8 mile from Artie; **Eagle Coal**; elevation, 1910′ B.; butts, east; faces, north; coal mined by **Sanford Williams** for local fuel; section by Krebs.

			Ft.	In.
Sandstone with coal streaks			10	0
Coal, gas	1′	0″		
Shale, gray	2	6		
Coal, gas (to gray shale floor)	4	10	8	4

Solvay Collieries Co. Prospect—No. 241 on Map II.

On the head of Left Fork of Whiteoak Creek, 2.2 miles northeast from Artie; **Eagle Coal**; elevation, 1900′ B.; butts, N. 70° W.; faces, N. 20° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2 ″		
Slate, black	0	0½		
Coal, block	0	6½		
Coal, bony	0	2		
Coal, block	2	4		
Coal, splinty	0	2		
Coal, gas (to slate floor)	0	6	4	11

Solvay Collieries Co. Prospect—No. 242 on Map II.

On Left Fork of Whiteoak Creek, 1.9 miles northeast of Artie; **Eagle Coal**; elevation, 1880′ B.; butts, N. 50° W.; faces, N. 40° E.; greatest rise, southeast.

			Ft.	In.
Coal, gas, (with slate roof)	1′	10 ″		
Slate, dark	0	0¼		
Coal, hard	0	10		
Coal, block	2	2		
Coal, gas (to slate floor)	0	8	5	6¼

Solvay Collieries Co. Prospect—No. 243 on Map II.

In Taylor Lick Hollow of Whiteoak Creek, 1.7 miles northeast of Artie; **Eagle Coal**; butts, N. 69° W.; faces, N. 21° E.; greatest rise, southeast; section by Teets; elevation, 1900′ B.

				Ft.	In.
1.	**Coal**, gas (with slate roof)	1′	9 ″		
2.	Slate, gray	0	1½		
3.	**Coal**, block	2	8		
4.	Slate, dark	0	0⅛		
5.	**Coal**, gas (to slate floor)	0	10⅜	5	5

The analysis of a sample (248-T) collected from Nos. 1, 3 and 5 is published under **No. 243** in the table at the end of this Chapter.

Solvay Collieries Co. Prospect—No. 243A on Map II.

On Lick Branch of Whiteoak Creek, 2.1 miles north 60° east of Artie; **Eagle Coal**; elevation, 1990′ B.; butts, N. 64° W.; faces, N. 26° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	2′	0″		
Slate, gray	0	6		
Coal, gas, visible	3	2	5	8

Rowland Land Co. Prospect—No. 244 on Map II.

On Lick Fork of Clear Fork, 1.2 miles southwest of Artie; **Eagle Coal**; elevation, 2025′ B.; butts, N. 66° W.; faces, N. 24° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, very soft, columnar (with sandstone roof)	1′	10″		
Clay, gray	0	3		
Coal, blocky (to slate floor)	2	1	4	2

Rowland Land Co. Prospect—No. 245 on Map II.

On head of McGraw Branch of Workman Creek, 2.2 miles southwest of Clear Creek P. O.; **Eagle Coal**; elevation, 2250′ B.; butts, N. 70° W.; faces, N. 20° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal,** gas (with slaty shale roof)	4′	0″		
2.	Slate, dark	0	1		
3.	**Coal,** very soft	1	0		
4.	**Coal,** harder (to slate floor)	2	6	7	7

A sample collected from Nos. 3 and 4 by G. R. Krebs and analyzed by F. C. Broeman & Co., of Cincinnati, Ohio, gave the following results:

	Per cent.
Moisture	1.38
Volatile Matter	24.12
Fixed Carbon	64.70
Ash	9.80
Total	100.00
Sulphur	1.21
B. T. U.	13,534

The excessive sulphur and ash is probably due to the fact that the sample was collected near the outcrop.

Rowland Land Company Prospect—No. 246 on Map II.

On head of Workman Creek, 3.2 miles southwest of Clear Creek; **Eagle Coal**; elevation, 2300′ B.; butts, N. 65° W.; faces, N. 25° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, very soft, columnar (with slate roof and floor)	4	2

Michigan & W. Va. Coal Co. Prospect—No. 247 on Map II.

On the head of McDowell Branch of Clear Fork, 1.3 miles west of Clear Creek P. O.; **Eagle Coal**; elevation, 2050′ B.; butts, N. 72° W.; faces, N. 18° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with slate roof)	0′ 10″		
2.	Slate, gray	1 9		
3.	**Coal**, gas	0 8		
4.	Slate, gray	0 4		
5.	**Coal**	0 6		
6.	Slate, dark	0 3		
7.	**Coal**, soft, columnar	2 2		
8.	Slate	0 6		
9.	**Coal**, gas (to slate floor)	2 9	9	9

The analysis of a sample (251-T) collected from Nos. 1, 3, 5, 7 and 9 is published under **No. 247** in the table at the end of this Chapter.

A sample collected by G. R. Krebs and analyzed by F. C. Broeman & Co., of Cincinnati, Ohio, gave the following results:

	Per cent.
Moisture	1.17
Volatile Matter	26.90
Fixed Carbon	70.03
Ash	1.90
Total	100.00
Sulphur	0.60
B. T. U.	14,715

The above analysis shows the coal low in volatile matter and ash, and unusually high in fixed carbon.

McKinley Land Company Prospect—No. 248 on Map II.

On the north side of Clear Fork, 2.1 miles southeast of Clear Creek P. O.; **Eagle Coal**; elevation, 2270′ B.; butts, N. 58° W.; faces, N. 32° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	1′	2″		
Coal, very soft	0	10		
Coal, block (to slate floor)	1	7	3	7

Willis Branch Coal Co. Opening—No. 249 on Map II.

On branch of Dickson Branch of Paint Creek, 1.5 miles northwest of Cirtsville; **Eagle Coal**; elevation, 2450′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

				Ft.	In.
1.	Shale and sandstone				
2.	**Coal,** very soft, columnar	1′	8″		
3.	**Coal,** harder (to slate floor)	1	10	3	6

A sample collected from Nos. 2 and 3 by G. R. Krebs and analyzed by F. C. Broeman & Co., of Cincinnati, Ohio, gave the following results:

	Per cent.
Moisture	1.29
Volatile Matter	24.97
Fixed Carbon	67.59
Ash	6.15
Total	100.00
Sulphur	0.65
B. T. U.	14,099

The above analysis shows the coal to be low in moisture and volatile matter and high in fixed carbon and B. T. U.

A. H. West Local Mine Opening—No. 250 on Map II.

On the north side of Buffalo Fork of Toney Fork, 2.3 miles S. 80° E. from Clear Creek P. O.; **Eagle Coal**; driven in about 50 feet; butts, N. 30° W.; faces, N. 60° E.; elevation, 2260′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	1′	0″		
Slate, dark	2	4		
Coal, gas	1	10		
Slate	0	1		
Coal, gas (to slate floor)	2	2	7	5

Rowland Land Company Prospect—No. 251 on Map II.

On head of Stover Fork of Clear Fork, 3 miles south of Clear Creek P. O.; **Eagle Coal**; elevation, 2280′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	9

Willis Branch Coal Company Mine—No. 252 on Map II.

Near Herberton, Fayette County, and 0.3 mile north of the Fayette-Raleigh County Line; **Eagle Coal**; elevation, 2475′ L.; section by Krebs.

		Ft.	In.
Slate, dark, plant fossils.....			
Coal, gas.....	1′ 10″		
Coal, gas.....	0 4		
Coal, soft, gas (to slate floor)..	2 0	4	2

The analysis of a sample collected by Ray V. Hennen and published in Volume II(A), page 348, (No. 23 in Bulletin 2, page 257) of the Survey Reports, is given in the table of coal analyses at the end of this Chapter under **No. 252.**

Solvay Collieries Co. Mine—No. 252A on Map II.

South of Keeferton, Fayette County, 1.5 miles north of the Raleigh-Fayette County Line; **Eagle Coal**; elevation, 1880′ L.; section by Krebs.

		Ft.	In.
Coal, soft, gas (with soft sandstone roof).....	4′ 5″		
Slate, gray.....	0 1		
Coal, hard, gas (to slate floor)..	2 6	7	0

Rowland Land Company Prospect—No. 253 on Map II.

On the head of Wingrove Branch of Sandlick Creek, 2.0 miles north of Dameron; **Eagle Coal**; elevation, 2360′ B., butts, N. 58° W.; faces N. 32° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
1. **Coal**, gas (with slate roof)..	2′ 0″		
2. **Coal**, harder, columnar (to slate floor).....	1 11	3	11

The analysis of a sample (242-T) collected from Nos. 1 and 2 of above section is published under **No. 253** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 254 on Map II.

On the head of Dillon Branch of Sandlick Creek, 2.3 miles northeast from Dameron; **Eagle Coal**; elevation, 2415′ B.; butts, N. 64° W.; faces, 26° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	5″		
Shale, gray	0	7		
Coal, visible	2	0	3	0

Rowland Land Company Prospect—No. 255 on Map II.

On the head of Dillon Branch of Sandlick Creek, 2.4 miles northeast of Dameron; **Eagle Coal**; elevation, 2455′ B.; butts, N. 64° W.; faces, N. 26° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with shale roof)	0′	5″		
Shale	0	11		
Coal, gas, blocky	2	7		
Coal, gas, soft (to slate floor)	0	5	4	4

Marsh Fork District, Raleigh County.

The Eagle Coal covers a considerable portion of the northwest part of Marsh Fork District. The coal comes about 100 feet above the bed of Marsh Fork at Jarrolds Valley and gradually rises above the bed of the same to the southeast until at Saxon the coal is more than 800 feet above Marsh Fork. A number of prospect openings have been made to prove the thickness and purity of this bed.

Rowland Land Company Prospect—No. 256 on Map II.

In west hollow, on Marsh Fork of Coal River, 2 miles southwest of Jarrolds Valley; **Eagle Coal**; elevation, 970′ B.; butts, N. 78° W.; faces, N. 12° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Shale, slaty			1	0
Coal, gas	1′	11″		
Slate, ferriferous	2	8		
Coal	1	1	5	8

Rowland Land Company Prospect—No. 257 on Map II.

On west side of Marsh Fork, at mouth of Lower Big Branch, 3.2 miles southwest of Jarrolds Valley; **Eagle Coal**; elevation, 1010′ B.; butts, N. 75° W.; faces, N. 15° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with sandstone roof)	0′ 10 ″		
2.	Slate, dark	0 2		
3.	**Coal**	0 1		
4.	Slate	0 0½		
5.	**Coal**	3 3		
6.	Shale, slaty	0 9		
7.	**Coal**, gas (to slate floor)	1 1	6	2½

The analysis of a sample (203-T) collected from Nos. 1, 3, 5 and 7 of above section is published under **No. 257** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 258 on Map II.

On Big Branch of Marsh Fork, 1.3 miles northwest of Hecla; **Eagle Coal**; elevation, 1060′ B.; butts, N. 78° W.; faces, N. 12° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal, gas (with sandstone roof)	0′ 11″		
Slate	0 3		
Coal	3 2		
Slate	0 7		
Coal, visible	0 8	5	7

Rowland Land Company Prospect—No. 259 on Map II.

On Boardtree Branch of Hazy Creek, 0.9 mile northwest of Launa; **Eagle Coal**; elevation, 1235′ B.; butts, N. 76° W.; faces, N. 14° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal, gas (with sandstone roof)	0′ 2 ″		
Coal	0 0½		
Slate, gray	0 0¼		
Coal, gas, glossy	2 0¼		
Coal, harder, block (to slate floor)	1 5	3	8

Rowland Land Company Prospect—No. 260 on Map II.

On head of Road Hollow of Hazy Creek, 1.1 miles west of Launa; **Eagle Coal**; elevation, 1235′ B.; butts, N. 77° W.; faces, N. 13° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with sandstone roof)	0′ 9″		
2.	Niggerhead	0 3		
3.	**Coal**, gas, glossy	1 10		
4.	**Coal**, hard, block (to slate floor)	1 8	4	6

The analysis of a sample (207-T) collected from Nos. 1, 3 and 4 of the above section is published under **No. 260** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 261 on Map II.

On Fall Rock Hollow of Hazy Creek, 4.5 miles west of Citie; **Eagle Coal**; elevation, 1400′ B.; butts, N. 60° W.; faces, N. 30° E.: section by Krebs.

		Ft.	In.
Coal, gas (with shale roof)	0′ 8½″		
Slate	0 3½		
Coal, gas	2 3		
Shale	0 2½		
Coal, gas (to slate floor)	1 10½	5	4

Rowland Land Company Prospect—No. 262 on Map II.

On west side of Marsh Fork, 0.3 mile west of Hecla; **Eagle Coal**; elevation, 1160′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

		Ft.	In.
Coal, gas (with sandstone roof)	0′ 9″		
Shale	0 2		
Coal, gas	2 2		
Slate	1 8		
Coal, gas (to slate floor)	0 10	5	7

Rowland Land Company Prospect—No. 263 on Map II.

On west side of Marsh Fork, 0.5 mile northwest of Hecla; **Eagle Coal**; elevation, 1160′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	2 ″		
Slate	0	0¼		
Coal, gas	0	5		
Shale	0	0¼		
Coal, gas	0	2½		
Shale, dark	0	2		
Coal, gas (to slate floor)	2	2	3	2

Rowland Land Company Prospect—No. 264 on Map II.

On east side of Marsh Fork, 0.3 mile east of Hecla; **Eagle Coal**; elevation, 1200′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	0′	11 ″		
Shale	0	1½		
Coal, gas	2	8		
Slate	0	10		
Coal, gas (to slate floor)	2	8	7	2½

Rowland Land Company Prospect—No. 265 on Map II.

On west side of Marsh Fork, ½ mile south of Hecla; **Eagle Coal**; elevation, 1200′ B.; butts, N. 60° W.; faces, N. 30° E.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	9½″		
Slate	0	1½		
Coal, gas	2	3		
Slate	0	1		
Coal (to slate floor)	1	3	4	6

Rowland Land Company Prospect—No. 266 on Map II.

On east side of Marsh Fork, ½ mile south of Hecla; **Eagle Coal**; elevation, 1210′ B.; butts, N. 50° W.; faces, N. 40° E.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	10½″		
Slate	0	1½		
Coal, gas	2	3½		
Shale	1	8		
Coal, gas (to slate floor)	1	4	6	3½

Rowland Land Company Prospect—No. 267 on Map II.

On east side of Marsh Fork, opposite the mouth of Hazy Creek; **Eagle Coal**; elevation, 1300′ B.; butts, N. 50° W.; faces, N. 40° E.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	9½″		
Slate	0	2		
Coal, (to slate floor)	3	7	4	6½

Rowland Land Company Prospect—No. 268 on Map II.

On east side of Marsh Fork on Stink Run, S. 30° E. 2 miles from Hecla; **Eagle Coal**; elevation, 1400′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Coal (with slate roof)	0′	3 ″		
Slate, 0″ to	0	0⅛		
Coal, gas	0	8		
Slate	0	2		
Coal, gas	2	6		
Shale	0	7		
Coal, gas (to slate floor)	2	10	7	0⅛

Rowland Land Company Prospect—No. 269 on Map II.

On east side of Marsh Fork, N. 20° W. 2.9 miles from Citie; **Eagle Coal**; elevation, 1510′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

				Ft.	In.
1.	**Coal**, gas (with shale roof)	0′	2½″		
2.	Slate	0	0½		
3.	**Coal**, gas	0	7½		
4.	Slate	0	1½		
5.	**Coal**, gas	2	5½		
6.	Slate	0	10		
7.	**Coal**, gas	1	3	5	6½

The analysis of a sample (449-K) collected from Nos. 1, 3, 5 and 7 of above section, as reported by Messrs. Hite and Krak, is given in the first table of analyses at the end of this Chapter under **No. 269.**

Rowland Land Company Prospect—No. 270 on Map II.

On west side of Shumate Creek, 0.7 mile south of Launa P. O.; **Eagle Coal**; elevation, 1415′ B.; butts, N. 40° W.; faces, N. 50° E.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	10 ″		
Shale	0	3½		
Coal, gas	2	1½		
Slate	0	1		
Coal, gas (to slate floor)	1	5	4	9

Rowland Land Company Prospect—No. 271 on Map II.

On west side of Marsh Fork near mouth of Shumate Creek, ½ mile southeast of Launa; **Eagle Coal**; elevation, 1400′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	0′	10 ″		
Shale, dark	0	2		
Coal, splinty, gas	0	2		
Coal, gas	2	0		
Slate	0	0½		
Coal, gas (to fire clay floor)	1	6	4	8½

Rowland Land Company Prospect—No. 272 on Map II.

On Right Fork of Shumate Creek, S. 10° E. 1.3 miles from Launa; **Eagle Coal**; elevation, 1525′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	0′	9 ″		
Slate	0	3		
Coal, gas	2	3		
Slate	0	1½		
Coal, gas (to slate floor)	1	6½	4	11

Rowland Land Company Prospect—No. 273 on Map II.

On west side of Marsh Fork, opposite the mouth of Horse Creek, N. 35° W. 2.0 miles from Citie; **Eagle Coal**; elevation, 1750′ B.; butts, N. 30° W.; faces, N. 60° E.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	9 ″		
Slate	0	1½		
Coal, gas	2	2		
Slate	0	0½		
Coal, gas (to slate floor)	1	4	4	5

Rowland Land Company Prospect—No. 274 on Map II.

On west side of Marsh Fork, N. 30° W. 1.5 miles from Citie; **Eagle Coal**; elevation, 1835′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	0′	8 ″		
Slate	0	2		
Coal, gas	2	8		
Slate	0	0½		
Coal, gas (to slate floor)	1	4	4	10½

Rowland Land Company Prospect—No. 275 on Map II.

On west side of Drews Creek on Moll Kelley Branch, S. 45° W. 1.4 miles from Citie; **Eagle Coal**; elevation, 1925′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

				Ft.	In.
1.	Shale, dark, full of plant fossils				
2.	**Coal**, gas	0′	1″		
3.	Shale, dark	0	2		
4.	**Coal**, gas	0	6		
5.	**Coal**, impure	0	6		
6.	**Coal**, gas	1	0		
7.	**Coal**, bone	0	1		
8.	**Coal**, gas (to slate floor)	1	7	3	11

The analysis of a sample (454-K) collected from Nos. 2, 4, 6 and 8 of above section is published under **No. 275** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 276 on Map II.

On west side of Drews Creek, on Canterbury Branch, 1.4 miles south 40° west of Citie; **Eagle Coal**; elevation, 1950′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal, gas (with shale roof)	0′	7 ″		
Slate	0	2½		
Coal, gas	2	1		
Slate	0	5		
Coal, gas (to slate floor)	1	10	5	1½

Rowland Land Company Prospect—No. 277 on Map II.

On west side of Drews Creek, 1.6 miles southwest of Citie; **Eagle Coal**; elevation, 1950′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	0′	9″		
Slate	0	3		
Coal, gas, visible	2	4		
Slate	0	9		
Coal	1	10	5	11

Rowland Land Company Prospect—No. 278 on Map II.

On Spring Branch of Drews Creek, S. 40° W. 2.0 miles from Citie; **Eagle Coal**; elevation, 1955′ B.; butts, N. 35° W.; faces, N. 55° E.; coal mined for local fuel use by **Lewis Hunter**; section by Krebs.

			Ft.	In.
Coal (with dark gray shale roof)	0′	8″		
Shale, dark	0	2		
Coal, impure	0	1		
Coal, gas	2	4		
Shale, gray	0	5		
Coal, gas (to slate floor)	2	6	6	2

Rowland Land Company Prospect—No. 279 on Map II.

On west side of Drews Creek, 2.8 miles southwest of Citie; **Eagle Coal**; elevation, 1990′ B.; butts, N. 80° W.; faces, N. 10° E.; coal mined for local fuel; section by Krebs.

			Ft.	In.
Coal (with gray shale roof)	0′	2 ″		
Slate	0	0½		
Coal	0	1		
Slate	0	0¼		
Coal, gas	0	1		
Slate	0	0¼		
Coal, gas	0	7		
Coal, impure	0	4		
Coal, gas	2	1		
Slate	0	1		
Coal, gas, hard	0	10		
Coal, gas (to slate floor)	1	0	5	4

PLATE XX.—View on Winding Gulf showing virgin forests.

Rowland Land Company Opening—No. 280 on Map II.

On head of Drews Creek; near trail leading through Indian Gap, 3.4 miles southwest from Citie; **Eagle Coal**; elevation, 1990′ B.; butts, N. 45° W.; faces, N. 45° E.; section by Krebs.

			Ft.	In.
1.	**Coal**, gas (with dark slate roof)	0′ 1″		
2.	Shale, dark	0 2		
3.	**Coal**	0 2		
4.	Shale, dark	0 3		
5.	**Coal**, splint	0 5		
6.	Shale, dark	0 1		
7.	**Coal**, gas	2 1		
8.	**Coal**, gas, hard	1 0		
9.	**Coal**, gas (to slate floor)	1 0	5	3

The analysis of a sample (452-K) collected from Nos. 1, 3, 5, 7, 8 and 9 of above section is published under **No. 280** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 281 on Map II.

On Fall Rock Branch of Drews Creek, 3.4 miles southwest of Citie; **Eagle Coal**; elevation, 2025′ B.; butts, N. 59° W.; faces, N. 31° E.; greatest rise, southeast.

		Ft.	In.
Coal, (with slate roof)	0′ 6″		
Slate, dark	0 2		
Coal, gas	2 2		
Slate	0 0½		
Coal, block (to slate floor)	1 11½	4	10

Rowland Land Company Prospect—No. 282 on Map II.

Near head of Drews Creek, 2.9 miles southwest of Citie; **Eagle Coal**; elevation, 2025′ B.; butts, N. 57° W.; faces, N. 33° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with shale roof)	3′ 0″		
2.	**Coal**, block (to slate floor)	1 7	4	7

The analysis of a sample (210-T) collected from Nos. 1 and 2 of above section is published under **No. 282** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 283 on Map II.

On Bluegrass Branch of Drews Creek, 2.6 miles southwest of Citie; **Eagle Coal**; elevation, 2025′ B.; butts, N. 45° W.; faces, N. 45° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)....	0′	8 ″		
Slate	0	3½		
Coal, gas.....	1	11		
Slate	0	1½		
Coal, gas (to slate floor).....	1	10½	4	10½

Rowland Land Company Prospect—No. 284 on Map II.

On Peach Branch of Drews Creek, 1.4 miles south of Citie; **Eagle Coal**; elevation, 2000′ B.; butts, N. 45° W.; faces, N. 45° E.; section by Teets.

			Ft.	In.
Coal, gas (with shale roof)....0′	9 ″			
Slate	0	2½		
Coal, gas.....	2	4½		
Slate	1	3		
Coal, gas (to slate floor).....	2	0	6	7

Rowland Land Company Prospect—No. 285 on Map II.

On the head of Williams Branch of Peachtree Creek, 2.0 miles southeast of Citie; **Eagle Coal**; elevation, 2190′ B.; butts, N. 58° E.; faces, N. 32° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)..... ...1′	0 ″			
Slate	0	11		
Coal, gas	1	4		
Slate	0	0¼		
Coal, gas, visible.....	1	8¾	5	0

Rowland Land Company Prospect—No. 286 on Map II.

On the north side of Williams Branch of Peachtree Creek, 1.9 miles southeast from Citie; **Eagle Coal**; elevation, 2175′ B.; butts, N. 58° E.; faces, N. 32° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof).....	1′	2″		
Slate	0	9		
Coal (to slate floor).....	2	2	4	1

Rowland Land Company Prospect—No. 287 on Map II.

On the south side of Miller Fork of Peachtree Creek, 2.9 miles southeast from Citie; **Eagle Coal**; elevation, 2285′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	1 ″		
Slate, gray	0	1		
Coal	0	2		
Slate, gray	0	0¾		
Coal	0	2¼		
Slate, dark	0	1		
Coal	0	2½		
Slate, dark	0	3½		
Coal, gas	2	4		
Slate, gray	0	10		
Coal, gas (to slate floor)	1	4	5	8

Rowland Land Company Prospect—No. 288 on Map II.

On Boardcamp Branch of Martin Fork of Peachtree Creek, 3.2 miles northwest of Redbird; **Eagle Coal**; elevation, 2075′ B.; butts, N. 56° W.; faces, N. 34° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
1.	Shale and sandstone roof		
2.	**Coal**, gas, visible	2	9

The analysis of a sample (226-T) collected from No. 2 of section is published under **No. 288** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 289 on Map II.

On the head of Martin Fork of Peachtree Creek, 4.1 miles south of Citie; **Eagle Coal**; elevation, 2300′ B.; section by Krebs; butts, N. 10° W.; faces, N. 80° E.

			Ft.	In.
Coal, impure (with dark gray shale roof)	0′	4 ″		
Slate	0	0½		
Coal, gas	0	4		
Slate	0	4½		
Coal, gas	1	4		
Shale, dark	0	1		
Coal, gas	0	7		
Slate	2	0		
Coal, gas, visible	2	2	7	3

Rowland Land Company Prospect—No. 290 on Map II.

On south side of Marsh Fork, 0.9 mile southwest of Masseysville; Eagle Coal; elevation, 2050′ B.; section by F. C. Colcord.

			Ft.	In.
Coal, gas (with shale roof)	0′	9 ″		
Slate	0	3		
Coal, gas	2	5½		
Slate	3	4		
Coal, gas (to slate floor)	2	4	9	1½

North of the last opening about 4 miles, near the head of Horse Creek, the following section was obtained by Krebs:

Jacob Jarrell Opening—No. 291 on Map II.

On north side of Horse Creek, 3.5 miles north of Masseysville; Eagle Coal; elevation, 1830′ B.; butts, N. 10° W.; faces, N. 80° E.

			Ft.	In.
Coal, gas, hard (with gray shale roof)	1′	0″		
Coal, gas (to slate floor)	2	0	3	0

John Q. Dickinson Prospect—No. 292 on Map II.

On south side of Horse Creek, 1.5 miles northwest of Dry Creek P. O.; Eagle Coal; elevation, 1855′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

				Ft.	In.
1.	Coal, impure (with dark shale roof)	0′	1″		
2.	Coal, gas	1	1		
3.	Coal, gray splint	2	0		
4.	Coal, gas (to slate floor)	1	0	4	2

The analysis of a sample (468-K) collected from Nos. 2, 3 and 4 of above section is published under **No. 292** in the table at the end of this Chapter.

Jacob Jarrell Opening—No. 293 on Map II.

On south side of Horse Creek, 2.2 miles north of Dry Creek P. O.; Eagle Coal; elevation, 1850′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	Coal, gas (with shale roof)	0′	10″		
2.	Slate, dark	0	2		
3.	Coal, gas (to slate floor)	2	3	3	3

The analysis of a sample (216-T) collected from Nos. 1 and 3 of above section is published under **No. 293** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 314 on Map II.

On the head of Sturgeon Fork of Dry Creek, 2.0 miles northeast of Dry Creek P. O.; **Eagle Coal**; elevation, 1985′ B.; butts, N. 65° W.; faces, N. 25° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with shale roof)	0′ 2″		
2.	Slate, gray	0 0½		
3.	**Coal**, block	0 9		
4.	Slate, gray	0 2½		
5.	**Coal**, gas	0 8		
6.	**Coal**, gas, columnar	1 6		
7.	**Coal**, gas, block	0 6	3	10

The analysis of a sample (228-T) collected from Nos. 1, 3, 5, 6 and 7 of above section is published under **No. 314** in the table at the end of this Chapter.

J. Q. Dickinson Opening—No. 295 on Map II.

On Lick Branch of Rock Creek, 0.5 mile northeast of Masseysville; **Eagle Coal**; elevation, 2040′ B.; butts, N. 57° W.; faces, N. 33° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with shale roof)	0′ 10″		
2.	Slate, gray	0 3		
3.	**Coal**, very soft	0 8		
4.	**Coal**, very soft, columnar	0 10		
5.	**Coal**, gas (to slate floor)	0 11	3	6

The analysis of a sample (234-T) collected from Nos. 1, 3, 4, and 5 of above section is published under **No. 295** in the table at the end of this Chapter.

J. Q. Dickinson Opening—No. 296 on Map II.

On head of McGinnis Branch of Rock Creek, 1.7 miles northeast of Masseysville; **Eagle Coal**; elevation, 2100′ B.; butts, N. 57° W.; faces, N. 33° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
1.	**Coal**, gas, blocky (with shale roof).....0′ 10″		
2.	Slate, gray.....0 2		
3.	**Coal**, very soft.....1 6		
4.	**Coal**, gas (to slate floor)...0 7	3	1

The analysis of a sample (236-T) collected from Nos. 1, 3 and 4 of above section is published under **No. 296** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 297 on Map II.

On Rock Creek, 2.2 miles northeast from Masseysville; **Eagle Coal**; elevation, 2090′ B.; butts, N. 57° W.; faces, N. 33° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Slate, cannelly, marine fossils.....		
Coal, gas.....	3	0

Rowland Land Company Prospect—No. 298 on Map II.

On the head of Stockingleg Branch of Rock Creek, 3.6 miles northeast from Masseysville; **Eagle Coal**; elevation, 2170′ B.; butts, N. 55° W.; faces, N. 35° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Slate, cannelly, marine fossils.....		
Coal, gas (to slate floor).....	2	4

Rowland Land Company Prospect—No. 299 on Map II.

On the head of Big Lick Branch of Rock Creek, 3.7 miles northeast of Masseysville; **Eagle Coal**; elevation, 2225′ B.; butts and faces, irregular; section by Teets.

	Ft.	In.
Coal, weathered (with shale roof and slate floor)	5	7

Rowland Land Company Prospect—No. 300 on Map II.

On the head of Flat Branch of Rock Creek, 3.9 miles northeast of Masseysville; **Eagle Coal**; elevation, 2220′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

			Ft.	In.
Coal, weathered (with slate roof)	3′	11″		
Slate	0	1		
Coal	0	1		
Slate	0	1		
Coal, weathered, visible	1	0	5	2

Rowland Land Company Prospect—No. 301 on Map II.

On the head of Crabtree Branch of Rock Creek, 3.2 miles northeast of Masseysville; **Eagle Coal**; elevation, 2215′ B.; butts. N. 58° W.; faces, N. 32° E.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	0′	4 ″		
Slate	0	0½		
Coal, gas (visible)	4	0	4	4½

Rowland Land Company Prospect—No. 302 on Map II.

On the west side of Marsh Fork, 1.3 miles southwest of Masseysville; **Eagle Coal**; elevation, 2180′ B.; butts, N. 58° W.; faces, N. 32° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with cannel slate roof)	0′	4 ″		
Slate, dark	0	0½		
Coal, gas	0	9½		
Shale, slaty	0	10		
Coal, gas, columnar (to slate floor)	2	4	4	4

Rowland Land Company Prospect—No. 303 on Map II.

On Bee Branch of Sandlick Creek, 1.5 miles north of Dameron; **Eagle Coal**; elevation, 2340′ B.; butts, N. 58° W.; faces, N. 32° E.; greatest rise, southeast; mined for home use by **R. S. Clay**; section by Teets.

				Ft.	In.
1.	**Coal**, gas, columnar (with slate roof)	2′	1 ″		
2.	**Coal**, very soft	1	4		
3.	**Coal**, gas	0	9		
4.	Slate, dark	0	0¾		
5.	**Coal**, gas, columnar (to slate floor)	1	2¼	5	5

The analysis of a sample (241-T) collected from Nos. 1, 2, 3 and 5 is published under **No. 303** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 304 on Map II.

On head of Dry Creek, 2.5 miles northeast of Masseysville; **Eagle Coal**; elevation, 2040′ B.; butts, N. 80° W.; faces, N. 10° E.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	2

The analysis of a sample (455-K) collected from the above opening is published under **No. 304** in the table at the end of this Chapter.

John Q. Dickinson Opening—No. 305 on Map II.

On west side of Marsh Fork, 0.4 mile west of Posey; **Eagle Coal**; elevation, 2380′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
1.	**Coal,** gas (with gray shale roof)	0′ 4″		
2.	Shale, dark.....	0 1		
3.	**Coal,** gas.....	0 3		
4.	Shale, dark.....	0 4		
5.	**Coal,** gas.....	2 0		
6.	**Coal,** hard (to slate floor)..	0 6	3	6

The analysis of a sample (470-K) collected from Nos. 1, 3, 5 and 6 of above section is published under **No. 305** in the table at the end of this Chapter.

Quantity of Eagle Coal Available.

Based on the evidence furnished in the preceding pages, and with a planimeter determination of the area from its outcrop on Map II, by Teets, the following estimate is made of the probable amount of Eagle Coal:

Probable Amount of Eagle Coal.

Raleigh County by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	4′ 6″	34	21,760	4,265,395,200	170,615,808
Marsh Fork	4 6	54	34,560	6,774,451,200	270,978,048
Totals		88	56,320	11,039,846,400	441,593,856

THE LITTLE EAGLE COAL.

The Little Eagle Coal is of minable thickness throughout a portion of Clear Fork and Marsh Fork Districts in Raleigh County. It comes from 0 to 5 feet under the Decota Sandstone. Sections will be given showing the thickness and structure of this coal.

Clear Fork District, Raleigh County.

Four States Coal & Coke Co. Prospect—No. 306 on Map II.

At Dorothy, on gravity incline; **Little Eagle Coal**; elevation, 1225′ L.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	0″		
Slate	0	1		
Coal, gas	1	7		
Slate	0	2		
Coal, gas (to slate floor)	0	7	3	5

Four States Coal & Coke Co. Prospect—No. 307 on Map II.

On south side of Clear Fork, ½ mile west of Dorothy; **Little Eagle Coal**; elevation, 1160′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal, gas (with sandstone roof and slate floor)	2	3½

Robson & Prichard Prospect—No. 308 on Map II.

On Gardner Branch of Clear Fork, 0.4 mile north of Dorothy; **Little Eagle Coal**; elevation, 1170′ B.; butts, N. 60° W.; faces, N. 30° E.; greatest rise, southeast.

	Ft.	In.
Coal, gas (with sandstone roof and slate floor)	1	4

In passing to the southeast from Colcord, the interval between Eagle and Little Eagle beds becomes less, as is shown in the sections of the Eagle Coal already given on preceding pages of this Report, the two beds uniting in one and attaining a thickness of 6 to 8 feet, as shown in the mine of the Milburn Coal & Coke Co. at Keeferton, in Fayette County, one mile north of the Raleigh-Fayette County Line.

The following section was obtained by Teets in the extreme southeastern portion of Clear Fork District:

Rowland Land Company Opening—No. 309 on Map II.

On Righthand Fork of Dillon Branch, 1.8 miles northwest of Matville; **Little Eagle Coal**; elevation, 2400′ B.; butts, N. 63° W.; faces, N. 27° E.; greatest rise, southeast; mined by **Monroe Dillon** for domestic use.

			Ft.	In.
Coal, gas (with slate roof)	3′	0″		
Coal, harder, bony	0	11	3	11

Rowland Land Company Prospect—No. 310 on Map II.

On Workman Creek of Clear Fork, 2.7 miles almost due south of Clear Creek P. O.; **Little Eagle Coal**; elevation, 2250′ B.; butts, N. 64° W.; faces, N. 26° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	5 ″		
Slate	0	4½		
Coal, block	1	0½		
Slate, gray	0	3		
Coal, gas	0	6		
Slate, dark	0	0¼		
Coal, block	1	8¾	4	4

Rowland Land Company Prospect—No. 311 on Map II.

On head of Workman Creek, 2.6 miles north of Dameron; **Little Eagle Coal**; elevation, 2260′ B.; butts, N. 64° W.; faces, N. 26° E.; greatest rise, southeast.

	Ft.	In.
Coal, soft, columnar (with sandstone roof and slate floor)	3	3

Marsh Fork District, Raleigh County.

In Marsh Fork District, the Little Eagle Coal is from 20 to 60 feet under the Eagle bed, and attains minable thickness in a portion of the central and southern parts of the District, as is shown by the following sections:

Dow Jarrell Heirs Opening—No. 312 on Map II.

On north side of Horse Creek, 2.7 miles north of Dry Creek P. O.; **Little Eagle Coal**; elevation, 1740′ B.; butts, N. 80° W.; faces, N. 10° E.; mined for local fuel; section by Krebs.

				Ft.	In.
1.	Sandstone, massive, **Decota**				
2.	Shale, dark			3	0
3.	**Coal**, splint	0′	2 ″		
4.	Slate	0	0½		
5.	**Coal**, splint	0	4		
6.	Slate	0	0¼		
7.	**Coal**	0	2		
8.	Slate	0	0¼		
9.	**Coal**, splint	0	3		
10.	Shale, dark	0	4		
11.	**Coal**, gas	2	2		
12.	Shale, dark	0	5		
13.	**Coal**, gas, visible	1	0	4	11

The analysis of a sample (461-K) collected from Nos. 3, 5, 7, 9, 11 and 13 is published under **No. 312** in the table at the end of this Chapter.

Jacob Jarrell Opening—No. 313 on Map II.

On head of Horse Creek, 3.1 miles north of Dry Creek P. O.; **Little Eagle Coal**; elevation, 1810′ B.; mined for local fuel; butts, N. 10° W.; faces, N. 80° E.; section by Krebs.

			Ft.	In.
Shale			1	0
Coal, gas	0′	4″		
Slate	0	1		
Coal, gas, visible	3	0	3	5

Rowland Land Company Prospect—No. 315 on Map II.

On the head of Dry Creek, 2.8 miles northeast of Dry Creek P. O.; **Little Eagle Coal**; elevation, 2020′ B.; butts, N. 87° W.; faces, N. 3° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	11″		
Slate, dark	0	2		
Coal, block (to slate floor)	2	4	3	5

Rowland Land Company Prospect—No. 316 on Map II.

On Fall Rock Branch of Drews Creek, 3.3 miles southwest of Citie; **Little Eagle Coal**; elevation, 1940′ B.; butts, N. 10° W.; faces, N. 80° E.; section by Teets.

			Ft.	In.
Coal, gas, (with slaty shale roof)	0′	11″		
Slate, gray	0	2		
Coal	1	11	3	0

Rowland Land Company Prospect—No. 317 on Map II.

On Williams Branch of Peachtree Creek, 2.0 miles south of Citie; **Little Eagle Coal**; butts, N. 10° W.; faces, N. 80° E.; elevation, 2160′ B.

			Ft.	In.
Coal, impure (with shale roof)	0′	2″		
Coal, gas	0	7		
Slate, gray	0	2		
Coal	2	5		
Slate	2	8		
Coal, gas, visible	1	0	7	0

Rowland Land Company Prospect—No. 318 on Map II.

On Martin Fork of Peachtree Creek, 3.1 miles south of Citie; **Little Eagle Coal**; elevation, 2180′ B.; butts, N. 10° W.; faces, N. 80° E.; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	5″		
Slate	0	2		
Coal, gas	2	4		
Slate	0	1		
Coal, gas, visible	1	6	4	6

J. Q. Dickinson Prospect—No. 319 on Map II.

On branch of Rock Creek, 1.5 miles northeast of Masseysville; **Little Eagle Coal**; elevation, 2065′ B.; butts, N. 15° W.; faces, N. 75° E.; section as reported by tenant to Teets.

			Ft.	In.
Coal	0′	10″		
Slate	0	2		
Coal (to slate floor)	2	6	3	6

Rowland Land Company Prospect—No. 320 on Map II.

On the head of Stockingleg Branch of Rock Creek, 2.9 miles northeast of Masseysville; **Little Eagle Coal**; elevation, 2075′ B.; butts, N 59° W.; faces, N. 31° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	1′	10″		
Slate	0	2		
Coal, gas (to slate floor)	2	5	4	5

Rowland Land Company Prospect—No. 321 on Map II.

On the head of Lick Branch of Rock Creek, 3.1 miles northeast of Masseysville; **Little Eagle Coal**; elevation, 2150′ B.; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	2′	1″		
Slate, gray	0	5		
Coal, harder (to slate floor)	1	3	3	9

Rowland Land Company Prospect—No. 322 on Map II.

On head of Boardcamp Branch of Martin Fork of Peachtree Creek, 3.7 miles south of Citie; **Little Eagle Coal**; elevation, 2100′ B.; butts, N. 62° W.; faces, N. 28° E.; greatest rise, southeast; section by Teets

			Ft.	In.
Coal, impure (with slate roof)	0′	5″		
Coal	0	5		
Slate, gray	0	3		
Coal, gas	2	3		
Slate, gray	0	1		
Coal, gas, visible	1	4	4	9

Quantity of Little Eagle Coal Available.

Based on the evidence of the preceding pages and on an areal determination by Teets, the following estimate is made of the probable amount of Little Eagle Coal in Raleigh County:

Probable Amount of Little Eagle Coal.

Raleigh County by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	3′ 0″	14	8,960	1,170,892,800	46,835,712
Marsh Fork	3 6	25	16,000	2,286,900,000	91,476,000
Totals		39	24,960	3,457,792,800	138,311,712

LOWER WAR EAGLE COAL.

The Lower War Eagle Coal exists in Marsh Fork and Clear Fork Districts of Raleigh County. It is a multiple-bedded gas coal, and is not so thick as the Eagle or the Campbell Creek (No. 2 Gas) Coals, but owing to its occurrence near the heads of the streams, a large percentage of the area is underlain with it, so that it becomes a valuable coal in these two districts.

Clear Fork District, Raleigh County.

The Lower War Eagle Coal rises out of Clear Fork of Coal River about 1.5 miles east of Jarrolds Valley, and rises faster than the stream to the southeast so that at Clear Creek P. O., the coal is more than 300 feet above the bed of the stream.

Rowland Land Company Prospect—No. 323 on Map II.

On south side of Clear Fork, 1.8 miles southeast of Jarrolds Valley; **Lower War Eagle Coal**; elevation, 950′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

	Ft.	In.
Coal, gas (with dark shale roof)	2	2
Shale, dark	2	0
Sandstone, massive, to railroad level	2	5

Four States Coal & Coke Co. Prospect—No. 324 on Map II.

On south side of Clear Fork on Dorothy incline; **Lower War Eagle Coal**; elevation, 1020′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

Coal, gas (with gray shale roof and sandstone floor).. 2 Feet.

West Virginia Coal Land Co. Prospect—No. 325 on Map II.

On Dow Fork of Long Branch, 1.7 miles northeast of Colcord; **Lower War Eagle Coal**; elevation, 1380′ B.; butts, N. 80° W.; faces, N. 10° E.; section by Krebs.

			Ft.	In.
1. **Coal**, gas (with gray shale roof)	0′	3″		
2. **Coal**, gas, harder	0	6		
3. **Coal**, gas, columnar	0	5		
4. **Coal**, gas, splinty	0	5		
5. **Coal**, gas, soft (to slate floor)	0	8	2	3

The analysis of a sample (464-K) collected from Nos. 1, 2, 3, 4 and 5 of above section is published under **No. 325** in the table of analyses at the end of this Chapter.

A. H. West Prospect—No. 326 on Map II.

On Buffalo Fork of Toney Fork, 2.3 miles southeast of Clear Creek P. O.; **Lower War Eagle Coal**; elevation, 2020′ B.; butts, N. 25° W.; faces, N. 65° E.; section by Krebs.

			Ft.	In.
Coal, gas (with dark shale roof)	1′	1½″		
Slate	0	0½		
Coal, gas (to slate floor)	1	2	2	4

Rowland Land Company Opening—No. 327 on Map II.

On Stover Fork of Clear Fork, 3.2 miles south of Clear Creek P. O.; **Lower War Eagle Coal**; elevation, 2125′ B.; butts, N. 30° W.; faces, N. 60° E.; coal mined for local fuel by **Burrell Stover**; section by Krebs.

			Ft.	In.
Coal, gas, soft (with dark shale roof)	0′	6″		
Coal, gas, harder (to slate floor)	2	2	2	8

Rowland Land Company Opening—No. 328 on Map II.

On Left Fork of Stover Fork of Clear Fork, 3.4 miles southeast of Clear Creek P. O.; **Lower War Eagle Coal**; elevation, 2065′ B.; reported to be 3 feet thick; coal mined for local fuel by **Anderson Sloan**; section by Krebs.

Coal, gas, visible (with sandstone roof).....2 Feet.

Rowland Land Company Opening—No. 329 on Map II.

On the head of Workman Creek, 3 miles north of Dameron; **Lower War Eagle Coal**; elevation, 1980′ B.; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Coal, gas (with shale roof)	1′	10″		
Slate, gray	1	4		
Coal, gas	1	0		
Slate, gray	0	4		
Coal	0	2		
Slate	0	1		
Coal	0	11		
Slate, gray	0	3		
Coal, gas (to slate floor)	1	0	6	11

Paris Stover Opening—No. 330 on Map II.

On an eastern fork of Clear Fork, one mile southwest of the corner of Clear Fork and Town Districts, in the Raleigh-Fayette County Line; **Lower War Eagle Coal**; elevation, 2110′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal (with sandstone roof and slate floor)	1	3

McKinley Land Company Opening—No. 331 on Map II.

On the head of Toney Fork of Clear Fork, 2.3 miles east of Clear Creek P. O.; **Lower War Eagle Coal**; elevation, 2065′ B.; butts, N. 87° W.; faces, N. 3° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, very soft (massive sandstone roof)	0′	3″		
Coal, gas, columnar	2	4		
Coal, very soft (to slate floor)	0	10	3	5

Rowland Land Company Opening—No. 332 on Map II.

On Ewing Fork of Toney Fork of Clear Fork, 2.0 miles northeast of Clear Creek P. O.; **Lower War Eagle**; elevation, 1960′ B.; butts, N. 87° W.; faces, N. 3° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal**, very soft (with slate roof)	0′	4″		
2.	**Coal**, gas, columnar	2	3		
3.	**Coal**, very soft (to slate floor)	0	11	3	6

The analysis of a sample (254-T) collected from Nos. 1, 2 and 3 of above section, as reported by Messrs. Hite and Krak, is published under **No. 332** in the table at the end of this Chapter.

G. C. Phipps Opening—No. 333 on Map II.

On the head of Blackburn Branch of Sandlick Creek, 1.3 miles north of Matville; **Lower War Eagle Coal**; elevation, 2210′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal, gas (with shale roof and slate floor)	2	6

G. A. Martin Opening—No. 334 on Map II.

On the eastern end of Chestnut Flat Mountain, 1.3 miles northwest of Harper; **Lower War Eagle Coal**; elevation, 2520′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	0′	8″		
Slate	0	2		
Coal, gas (to slate floor)	2	0	2	10

G. A. Martin Opening—No. 335 on Map II.

In county road at G. A. Martin's house, on the eastern end of Chestnut Flat Mountain, 1.0 mile northwest of Harper; **Lower War Eagle Coal**; elevation, 2540′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	2	3

Rowland Land Company Opening—No. 336 on Map II.

On head of Dillon Branch of Sandlick Creek, 1.7 miles northwest of Matville; **Lower War Eagle Coal**; elevation, 2140′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal, weathered, soft (with slate roof and floor)	2	7

Marsh Fork District, Raleigh County.

The Lower War Eagle Coal comes out of Marsh Fork about one-half mile west of Hecla, and rises to the southeast faster than the bed of the stream until at Masseysville the coal is more than 350 feet higher than the bed of the stream.

Rowland Land Company Prospect—No. 337 on Map II.

On west side of road, ¼ mile south of Hecla; **Lower War Eagle Coal**; elevation, 950′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with gray shale roof)	0′	6″		
Slate	0	4		
Coal, gas	0	4		
Slate	1	4		
Coal, gas (to slate floor)	0	4	2	10

Another section about 1000 feet south of No. 337 is reported by Teets as follows:

Rowland Land Company Prospect—No. 338 on Map II.

			Ft.	In.
Coal, gas (with slate roof)	1′	8″		
Fire clay, slaty	3	0		
Shale, dark	3	0		
Coal, gas (to slate floor) elevation, 940′ B.	0	10	8	6

Rowland Land Company Local Mine—No. 338A on Map II.

On Right Fork of Shumate Creek, 1.0 mile southeast of Launa; **Lower War Eagle Coal**; elevation, 1345′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Sandstone, massive				
Shale, gray, weathering reddish			4	0
Coal, gas	1′	3″		
Slate	0	1		
Coal, gas	0	10		
Coal, hard	0	2		
Shale, gray	0	2		
Coal, impure	0	6		
Coal, gas (to slate floor)	0	10	3	10

Rowland Land Company Prospect—No. 339 on Map II.

On north side of Little Marsh Fork, 2.6 miles southeast of Jarrolds Valley; **Lower War Eagle Coal**; elevation, 1085′ B.; butts, N. 30° W.; faces, N. 60° E.; coal mined for local fuel; section by Krebs.

			Ft.	In.
Coal, gas (with massive sandstone roof)	0′	10″		
Shale, dark, 0″ to	0	2		
Coal, gas (to slate floor)	2	0	3	0

Rowland Land Company Prospect—No. 340 on Map II.

On Drews Creek, 3 miles southwest of Citie; **Lower War Eagle Coal**; elevation, 1790′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	6″		
Shale, gray	0	6		
Coal, gas, visible	2	0	3	0

Jacob Jarrell Local Mine—No. 341 on Map II.

On south side of Horse Creek, 2¼ miles north of Dry Creek, P. O.; **Lower War Eagle Coal**; elevation, 1660′ B.; butts, North; faces, West; section by Krebs.

				Ft.	In.
1.	**Coal**, gas (with gray shale roof)	2′	4″		
2.	**Coal**, impure	0	4		
3.	**Coal**, gas (to slate floor)	1	4	4	0

The analysis of a sample (459-K) collected from Nos. 1 and 3 of above section is published under **No. 341** in the table at the end of this Chapter.

John Q. Dickinson Mine—No. 342 on Map II.

On north side of Marsh Fork, 0.8 mile northwest of Dry Creek P. O;. **Lower War Eagle Coal**; elevation, 1650′ B.; butts, N. 40° W.; faces, N. 50° E.; coal mined for local fuel; section by Krebs.

				Ft.	In.
1.	Sandstone, massive.....				
2.	Shale, dark, plant fossils.....			4	0
3.	**Coal**, splint.....	0′	0½″		
4.	**Coal**, impure.....	0	0½		
5.	**Coal**, splint.....	0	3		
6.	Shale, dark.....	0	0¼		
7.	**Coal**, splint.....	0	2¾		
8.	Shale, dark gray.....	0	1		
9.	**Coal**, splint.....	0	2		
10.	**Coal**, gas.....	0	4		
11.	Shale, dark.....	0	0½		
12.	**Coal**, gas.....	0	5		
13.	Shale, dark.....	0	10		
14.	**Coal**, splint.....	0	1		
15.	Shale, dark.....	0	0½		
16.	**Coal**	0	3		
17.	Shale, dark.....	1	0		
18.	**Coal**, gas (to slate floor)...	2	7	6	5

The analysis of a sample (463-K) collected from Nos. 12, 14, 16 and 18 of above section is published under **No. 342** in the table at the end of this Chapter.

J. Q. Dickinson Opening—No. 343 on Map II.

On Dry Creek, 1.4 miles northeast of Dry Creek P. O.; **Lower War Eagle Coal**; elevation, 1770′ B.; butts, West; faces, North; greatest rise, southeast; **H. L. Burnside** mines coal for home use; section by Teets.

			Ft.	In.
Coal, gas, very soft (with shale roof)	2′	11″		
Slate, gray.....	0	8		
Coal, impure.....	0	5		
Coal, harder, visible.....	1	0	5	0

Rowland Land Company Prospect—No. 344 on Map II.

On Lick Branch, 0.8 mile northeast of Masseysville; **Lower War Eagle Coal**; elevation, 1800′ B.; butts, N. 80° W.; faces, N. 10° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal**, hard, splinty (with slate roof)	0′ 5″		
2.	**Coal**, gas	1 9		
3.	Slate, dark	0 3		
4.	**Coal**, gas	0 7		
5.	Slate, gray	0 1		
6.	**Coal**, gas (to slate floor)	1 0	4	1

The analysis of a sample (235-T) collected from Nos. 1, 2, 4 and 6 of above section is published under No. 344 in the table at the end of this Chapter.

Rowland Land Company Opening—No. 345 on Map II.

On branch of Peachtree Creek, 1.5 miles northwest of Redbird; **Lower War Eagle Coal**; elevation, 2070′ B.; butts, N. 80° W.; faces, N. 10° E.; greatest rise, southeast; coal mined by **Joseph Pettrey** for home use; section by Teets.

		Ft.	In.
Coal (with shale roof)	0′ 6″		
Slate	0 7		
Coal	0 2		
Slate	0 6		
Coal, gas	2 6		
Slate	0 2		
Coal (to slate floor)	1 0	5	5

Rowland Land Company Prospect—No. 346 on Map II.

On head of Peachtree Creek, 1.0 mile northwest of Redbird; **Lower War Eagle Coal**; elevation, 2150′ B.; butts, N. 81° W.; faces, N. 9° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal, gas (with shale roof)	0′ 8″		
Slate, gray	0 2		
Coal, gas	1 9		
Slate, gray	0 7		
Coal, gas	0 9		
Coal, impure (to slate floor)	0 3	4	2

Rowland Land Company Opening—No. 347 on Map II.

On head of Miller Fork of Peachtree Creek, 0.9 mile northwest of Posey; **Lower War Eagle Coal**; elevation, 2045′ B.; butts, N. 63° W.; faces, N. 27° E.; greatest rise, southeast; coal mined by **Russell Webb et al.** for local use; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with shale roof)	0′ 7″		
2.	Shale, slaty	0 6		
3.	**Coal**	0 2		
4.	Shale, gray	0 5		
5.	**Coal**, gas, very soft	2 7½		
6.	Slate	0 2		
7.	**Coal**, gas, harder (to slate floor)	1 0½	5	6

The analysis of a sample (221-T) collected from Nos. 1, 3, 5 and 7 of above section is published under **No. 347** in the table at the end of this Chapter.

Rowland Land Company Prospect—No. 348 on Map II.

On the north side of Miller Fork of Peachtree Creek, 1.3 miles northwest of Posey; **Lower War Eagle Coal**; elevation, 1990′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

		Ft.	In.
Coal (with shale roof)	0′ 5½″		
Slate	0 0½		
Coal	0 4		
Slate, gray	0 2		
Coal	0 3		
Slate, dark	0 5½		
Coal, gas	1 9½		
Slate, gray	0 7		
Coal, visible	0 4	4	5

Rowland Land Company Opening—No. 349 on Map II.

On Lick Fork of Rock Creek, 0.5 mile northeast of Masseysville; **Lower War Eagle Coal**; elevation, 1825′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

		Ft.	In.
Coal (with sandstone roof)	0′ 8″		
Slate, gray	0 2		
Coal, gas (to slate floor)	2 2	3	0

Rowland Land Company Opening—No. 350 on Map II.

On head of the Righthand Fork of Rock Creek, 2.1 miles north of Dameron; **Lower War Eagle Coal**; elevation, 2090′ B.; butts, N. 71° W.; faces, N. 19° E.; mined for home use by **Godfrey Price**; section by Teets.

			Ft.	In.
1.	**Coal**, gas (with sandstone roof)	0′ 7″		
2.	Slate, gray	0 3		
3.	**Coal**, gas	0 5		
4.	Slate, gray	0 5		
5.	**Coal**, gas	0 5½		
6.	Slate, dark	0 6½		
7.	**Coal**, block (to slate floor)	1 9	4	5

The analysis of a sample (240-T) collected from Nos. 1, 3, 5 and 7 of above section is published under **No. 350** in the table at the end of this Chapter.

J. Q. Dickinson Opening—No. 351 on Map II.

On Marsh Fork, 0.2 mile north of Masseysville; **Lower War Eagle Coal**; elevation, 1815′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

		Ft.	In.
Coal, hard (with slate roof)	0′ 10″		
Slate, gray	0 0½		
Coal, gas	1 9		
Slate	0 10		
Coal (reported)	1 6	4	11½

Quantity of Lower War Eagle Coal Available.

The following estimate, based on the evidence of the preceding pages, and on a planimetric determination by Teets of the acreage from Map II, shows the amount of Lower War Eagle Coal estimated to be available:

Probable Amount of Lower War Eagle Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft. In.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	2 0	50	32,000	2,787,840,000	111,513,600
Marsh Fork	2 6	65	41,800	4,552,020,000	182,040,800
Totals	.....	115	73,800	7,339,860,000	293,554,400

THE GLENALUM TUNNEL COAL.

In addition to the sections already given in the general sections, the following in **Clear Fork District, Raleigh County,** were reported by Teets:

Rowland Land Company Opening—No. 352 on Map II.

On the Lefthand Fork of Wingrove Branch of Sandlick Creek, 1.2 miles northeast of Dameron; **Glenalum Tunnel Coal;** elevation, 2025′ B.; butts, N. 10° W.; faces, N. 80° E.

	Ft.	In.
Slate, gray, plant fossils		
Coal, gas (to slate with plant fossils)	1	3

Rowland Land Company Opening—No. 353 on Map II.

On Workman Creek, near head; about midway between Clear Creek and Dameron; **Glenalum Tunnel Coal;** elevation, 2020′ B.; butts, N. 15° W.; faces, N. 75° E.

	Ft.	In.
Coal, block (with sandstone roof and slate floor)	1	9

It will be noted that this coal is too thin to be of minable thickness at this mine.

THE GILBERT COAL.

The Gilbert Coal comes from 450 to 510 feet under the Eagle Coal, and is of minable thickness in the southern portion of Clear Fork and Marsh Fork Districts. It is the lowest coal bed in the Kanawha Group, and is a double-bedded gas coal.

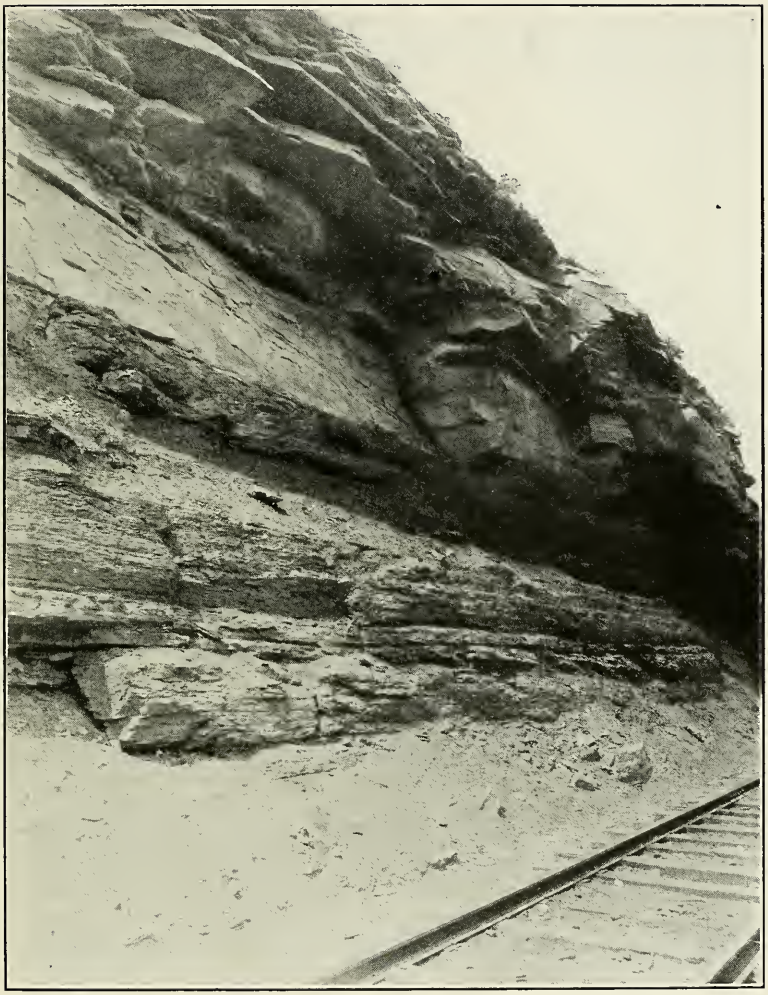

PLATE XXI.—Quinnimont Sandstone in the Virginian Railway grade, 1 mile west of Winding Gulf Station.

Clear Fork District, Raleigh County.

The Gilbert Coal comes above the bed of Clear Fork near Colcord, and rises rapidly to the southeast until at Clear Creek P. O., it is more than 160 feet above the bed of the stream.

Rowland Land Company Prospect—No. 354 on Map II.

On west side of Sycamore Creek, 0.3 mile south of Colcord; **Gilbert Coal**; elevation, 1040′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with massive sandstone roof)	0′	4 ″		
Slate	0	0¼		
Coal, gas	0	5		
Slate	0	0¾		
Coal, gas	0	3	1	1
Shale, dark			2	0
Sandstone, massive, to creek				

Solvay Collieries Co. Prospect—No. 355 on Map II.

On Fulton Creek, 1.5 miles northwest of Artie; **Gilbert Coal**; elevation, 1310′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	1 ″		
Shale, dark	0	1		
Coal, gas	0	1½		
Coal, gas	0	2		
Shale	0	0½		
Coal	0	2		
Shale	0	0½		
Coal (to slate floor)	0	1	0	9½

Rowland Land Company Prospect—No. 356 on Map II.

On Boyd Branch of Clear Fork, 1 mile west of Artie; **Gilbert Coal**; elevation, 1370′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with massive sandstone roof)	1′	0″		
Concealed	2	0	3	0
Sandstone to creek			10	0

Solvay Collieries Co. Prospect—No. 357 on Map II.

On the north side of Whiteoak Creek, 1.3 miles northeast of Artie; **Gilbert Coal**; elevation, 1565′ B.; section by Teets.

			Ft.	In.
Sandstone, massive				
Slate, gray			0	9
Slate, dark			0	6
Coal, block	1′	4″		
Bone	0	1		
Coal, block (to slate floor)	1	8	3	1

Solvay Collieries Co. Prospect—No. 358 on Map II.

On the north side of Whiteoak Creek, one mile northeast of Artie; **Gilbert Coal**; elevation, 1520′ B.; butts, N. 30° W.; faces, N. 60° E.; mined by farmers for local use; section by Teets.

			Ft.	In.
Slate (from sandstone cover)			1	6
Coal, gas, blocky	1′	4″		
Bone	0	1		
Coal, block (to slate floor)	1	7	3	0

Solvay Collieries Co. Opening—No. 359 on Map II.

On Horse Creek of Clear Fork, 1.2 miles east of Artie; **Gilbert Coal**; elevation, 1630′ B.; once mined for sawmill use; section by Teets.

	Ft.	In.
Slate (with shale cover)	2	0
Coal, visible	2	8

A. H. West Local Mine—No. 359A on Map II.

On north side of Buffalo Fork of Toney Fork, 1.3 miles southeast of Clear Creek P. O.; **Gilbert Coal**; elevation, 1710′ B.; butts, N. 10° W.; faces, N. 80° E.; coal mined for local fuel by **Andrew Wriston**; section by Krebs.

	Ft.	In.
Sandstone, massive		
Coal, gas, visible (with dark shale roof 3′ 0″)	2	6

A. H. West Local Mine—No. 360 on Map II.

On north side of Buffalo Fork of Toney Fork, near A. H. West's house, 1.5 miles southeast of Clear Creek P. O.; **Gilbert Coal**; elevation, 1760′ B.; section by Krebs.

			Ft.	In.
Coal, gas, visible (with dark shale roof)	2′	0″		
Concealed	1	0	3	0

M. D. Dameron Prospect—No. 361 on Map II.

On the head of Sandlick Branch of Sandlick Creek, in county road; **Gilbert Coal**; elevation, 2325′ B.; section by Teets.

	Ft.	In.
Coal, impure (with gray shale roof and slate floor)	2	0

Amos Stover Opening—No. 362 on Map II.

On the south side of the head of Sandlick Branch of Sandlick Creek, 2 miles southeast of Matville; elevation, 2270′ B.; **Gilbert Coal**; butts, N. 10° W.; faces, N. 80° E.; section by Teets.

			Ft.	In.
Coal, gas (with sandstone roof)	0′	11″		
Slate, dark	0	11		
Coal, gas (to slate floor)	1	0	2	10

J. B. Harper Opening—No. 363 on Map II.

On the north side of Sandlick Branch of Sandlick Creek, 1.2 miles southeast of Matville; **Gilbert Coal**; elevation, 2210′ B.; butts, N. 10° W.; faces, N. 80° E.; section by Teets.

			Ft.	In.
Shale, sandy, and slaty				
Coal, gas	1′	2″		
Slate	0	10		
Coal (to slate floor)	0	10	2	10

John Q. Dickinson Opening—No. 364 on Map II.

On the head of Sandlick Creek, in county road, 3 miles east of Matville; **Gilbert Coal**; elevation, 2245′ B.; section by Teets.

	Ft.	In.
Shale, sandy, and concealed		
Coal, impure (to slaty shale floor)	1	2

Marsh Fork District, Raleigh County.

The Gilbert Coal comes out of Marsh Fork just west of the mouth of Horse Creek. Only a few openings were observed in this district.

John Q. Dickinson Prospect—No. 365 on Map II.

On south side of Dry Creek, 0.6 mile northeast of Dry Creek P. O.; **Gilbert Coal**; elevation, 1445′ B.; section by Krebs.

			Ft.	In.
Coal, impure (with massive sandstone roof)	1′	1″		
Coal, gas	0	2		
Shale, dark	0	10		
Coal, gas (to dark shale floor)	1	0	3	1

John Q. Dickinson Mine—No. 366 on Map II.

At Posey; **Gilbert Coal**, mined for local fuel by **Lewis Webb**; elevation, 1950′ B.; section by Krebs.

			Ft.	In.
Coal, gas (dark shale roof)	1′	3″		
Shale, dark	1	0		
Coal, gas	0	3		
Slate	0	1		
Coal, gas (to slate floor)	0	3	2	10

Rowland Land Company Prospect—No. 366A on Map II.

On west side of Peachtree Creek, 1.0 mile due south from Peachtree School House; **Gilbert Coal**; elevation, 1940′ B.; section by Teets

				Ft.	In.
1.	Slate roof				
2.	**Coal**, gas	0′	8″		
3.	Slate	0	0½		
4.	**Coal**	0	3½		
5.	Slate	0	1		
6.	**Coal**	1	8	2	9
7.	Slate floor				

The composition of a sample (223-T) collected from Nos. 2, 4 and 6 of above section, as reported by Messrs. Hite and Krak, is given under **No. 366A** in the table of coal analyses at the end of this Chapter.

Quantity of Gilbert Coal Available.

The following estimate, based on the evidence of the preceding pages, is the approximate amount of available coal in the Gilbert bed. The sections show that there is probably 12 square miles of Clear Fork District that carries this coal of minable thickness, and no area in Marsh Fork District:

Probable Amount of Gilbert Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft. In.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork.....	2 3	12	7,680	752,716,800	30,108,672

COALS IN THE NEW RIVER GROUP.

The coals in the New River Group are softer, more friable, containing less volatile matter, and more fixed carbon than the coals in the Kanawha Group. These coals are called "smokeless coals" in the market for the reason that they emit less smoke in ordinary burning than the coals high in volatile matter.

THE DOUGLAS COAL.

The Douglas Coal is the top-most coal in the New River Group. It is a double-bedded coal and is of minable thickness in a portion of Raleigh County. A few sections will be given as follows:

Clear Fork District, Raleigh County.

The Douglas Coal rises out of Clear Fork about 1.5 miles south of Clear Creek P. O., and gets above the bed of the creek to the south.

Virginia Stover Opening—No. 367 on Map II

On the east side of Clear Fork, 0.6 mile above the mouth of Stover Fork, 2.6 miles southeast of Clear Creek P. O.; **Douglas Coal;** elevation, 1621′ B.; butts, N. 35° W.; faces, N. 55° E.; section by Teets.

	Ft.	In.
Slate, cannelly, full of marine fossils.....		
Coal, gas (to slate floor).....	2	3

Henry Wright Opening—No. 368 on Map II.

On the south side of Clear Fork, at the mouth of Spruce Fork, 3.3 miles southeast of Clear Creek P. O.; **Douglas Coal;** butts, N. 36° W.; faces, N. 54° E.; greatest rise, southeast; elevation, 1640′ B.; section by Teets.

	Ft.	In.
1. Slate, full of marine fossils.....		
2. **Coal**, gas (to slate floor).....	2	4

The analysis of a sample (252-T) collected from No. 2 of above section is published under **No. 368** in the table at the end of this Chapter.

J. Q. Dickinson Opening—No. 370 on Map II.

On branch of Sandlick Creek, 1.5 miles northeast of Matville; **Douglas Coal;** elevation, 1855′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Slate, gray (with massive sandstone cover).....	0	4
Coal .....0′ 4″		
Slate, dark.....0 6		
Coal, gas (to slate floor).....1 6	2	4

Amos Stover Opening—No. 371 on Map II.

Near the head of Sandlick Branch of Sandlick Creek, 2.6 miles southeast of Matville; **Douglas Coal;** elevation, 2080′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal, hard (with sandstone roof and slate floor)..	0	10

THE LOWER DOUGLAS COAL.

The Lower Douglas Coal comes from 100 feet to 120 feet under the Douglas Coal and is usually from 6 inches to 12 inches thick. The following section measured by Teets gives its general thickness and structure:

J. Q. Dickinson Opening—No. 369 on Map II.

On the north side of Sandlick Creek, 1.2 miles east of Matville; **Lower Douglas Coal**; elevation, 1825′ B.; butts, N. 40° W.; faces, N. 50° E.; stripped by natives for fuel; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	1	1

Coal Exposure—No. 374 on Map II.

Along the road, 0.5 mile northeast of Harper; **Lower Douglas Coal**; elevation, 2285′ B.

	Ft.	In.
Coal, gas, impure (with shale roof and slate floor)	0	8

Coal Exposure—No. 375 on Map II.

On side of road leading from Paint Creek to Sandlick Creek, 2.2 miles northeast of Matville; **Lower Douglas Coal**; elevation, 2100′ B.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	1	0

Coal Exposure—No. 378 on Map II.

On road leading from Marsh Fork to Trap Hill, (Marshes P. O.), and 0.4 mile west of same; **Lower Douglas Coal**; elevation, 2045′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Shale, yellowish green	0	6
Coal, gas (to fire clay floor)	2	0

J. H. Poteet Opening—No. 379 on Map II.

On side of road, 0.6 mile west of Marshes P. O.; **Lower Douglas Coal**; elevation, 2015′ B.; section by Krebs.

		Ft.	In.
Coal, impure (with friable sandstone roof)	0′ 8″		
Coal, gas (to dark shale floor)	0 8	1	4

From the foregoing sections given it will be noted that neither the Douglas nor the Lower Douglas Coal is of sufficient thickness and purity to be minable at this time.

THE IAEGER COAL.

From 100 to 185 feet under the Lower Douglas Coal comes the Iaeger Coal. This bed is from 250 to 350 feet over the Sewell bed of coal, and is usually thin and impure. No exposures of this bed were found in Marsh Fork District.

Clear Fork District, Raleigh County.

Coal Exposure—No. 376 on Map II.

On side of road, 0.4 mile south of Matville; **Iaeger Coal**; elevation, 1750′ B.; butts, N. 48° W.; faces, N. 42° E.; section by Krebs.

	Ft.	In.
Coal, gas (with sandstone roof)	1	1
Dark limy sandstone floor		

Trap Hill District, Raleigh County.

Coal Exposure—No. 377 on Map II.

In county road, 0.5 mile northwest of Harper; **Iaeger Coal**; elevation, 2110′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	0	8

In the Price Hill Core Test No. 4 (18), page 204, the Iaeger Coal shows one foot, at a depth of 215′ 6″. In the Crab Orchard Coal and Land Co. Core Test No. 4 (49), page 222, the Iaeger Coal shows 1′ 1″ at a depth of 164′ 6″.

THE LOWER IAEGER COAL.

The Lower Iaeger Coal is thin in the Raleigh-Mercer-Summers area, and quite frequently impure. This coal is not exposed in Marsh Fork or Clear Fork Districts in Raleigh County.

Trap Hill District, Raleigh County.

Coal Exposure—No. 380 on Map II.

In road near head of Stevens Branch of Millers Camp Branch, 1.4 miles northwest of Eccles; **Lower Iaeger Coal**; elevation, 2115′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	9

Coal Exposure—No. 381 on Map II.

On road leading from Stevens Branch to Dingess Branch, 2 miles northeast of Surveyor; **Lower Iaeger Coal**; elevation, 2015′ B.; section by Krebs.

	Ft.	In.
Coal, gas (with shale roof and slate floor).....	0	6

Coal Exposure—No. 382 on Map II.

On side of road, 1 mile southwest of Tolley; **Lower Iaeger Coal**; elevation, 2150′ B.; section by Krebs.

			Ft.	In.
Coal, impure	0′	6″		
Coal, gas	0	6	1	0

Sections of the Lower Iaeger Coal are given in some of the core test holes and sections already given in this Report.

THE CASTLE COAL.

Sections of this coal are given in some of the core test holes and sections published in this Report. The Castle Coal in Raleigh, Mercer and Summers Counties is thin and impure and has no commercial value.

THE SEWELL COAL.

The next lower coal is the **Sewell bed**, and it is one of the most important commercially in Raleigh County. This bed is mined in Town and Trap Hill Districts but is not mined commercially in either Mercer or Summers Counties.

Town District, Raleigh County.

The Sewell Coal outcrops along Piney Creek and its tributaries in the southern part of Town District, and for a short distance along Dunloup Creek in the northern part of the District. In the northwest and western parts of the District, the coal is mined by shafts from 120 to 450 feet in depth. Sections will now be given showing its thickness and structure.

New River Company, Price Hill Mine—No. 7 on Map II.

On Dunloup Creek, at Price Hill, just south of the Fayette-Raleigh County Line; **Sewell Coal**; elevation, 1714.38′ L.; butts, East; faces, North and South; thickness, 4′ 5″; section taken by Ray V. Hennen and published in Volume II(A), page 206, and analysis of sample on page 215; depth of shaft, 140.52 feet. For details, see above page references.

The analysis of sample collected by Hennen (No. 11 in Bulletin 2, page 241) is republished under **No. 7** in the table at the end of this Chapter. Samples of the coal (No. 12 in Bulletin 2, page 244) in this mine were also collected by the United States Bureau of Mines, and the analyses published in Bulletin 22, pages 287 and 1055, the same being republished under **No. 7** in the second table of coal analyses at the end of this Chapter.

The capacity of the mine was formerly 300 to 400 tons per day, but at present the mine is abandoned and no coal is being shipped.

McKell Coal & Coke Co., Oswald Mine—No. 8 on Map II.

On Dunloup Creek, 1.0 mile south of Price Hill; drift mine; **Sewell Coal**; elevation, 1920′ B.; butts, N. 65° W.; faces, N. 25° E.; thickness, 5′ 1″; section taken by Ray V. Hennen and published in Volume II(A), page 207, and analysis of sample on page 214. For details, see above references. Mine capacity, 500 tons; men employed, 80; coal shipped East and West for steam; principal office, Glen Jean, W. Va.; General Manager, Thomas Nichols.

The analysis of sample collected by Hennen (No. 13 in Bulletin 2, page 241) is republished under **No. 8** in the table

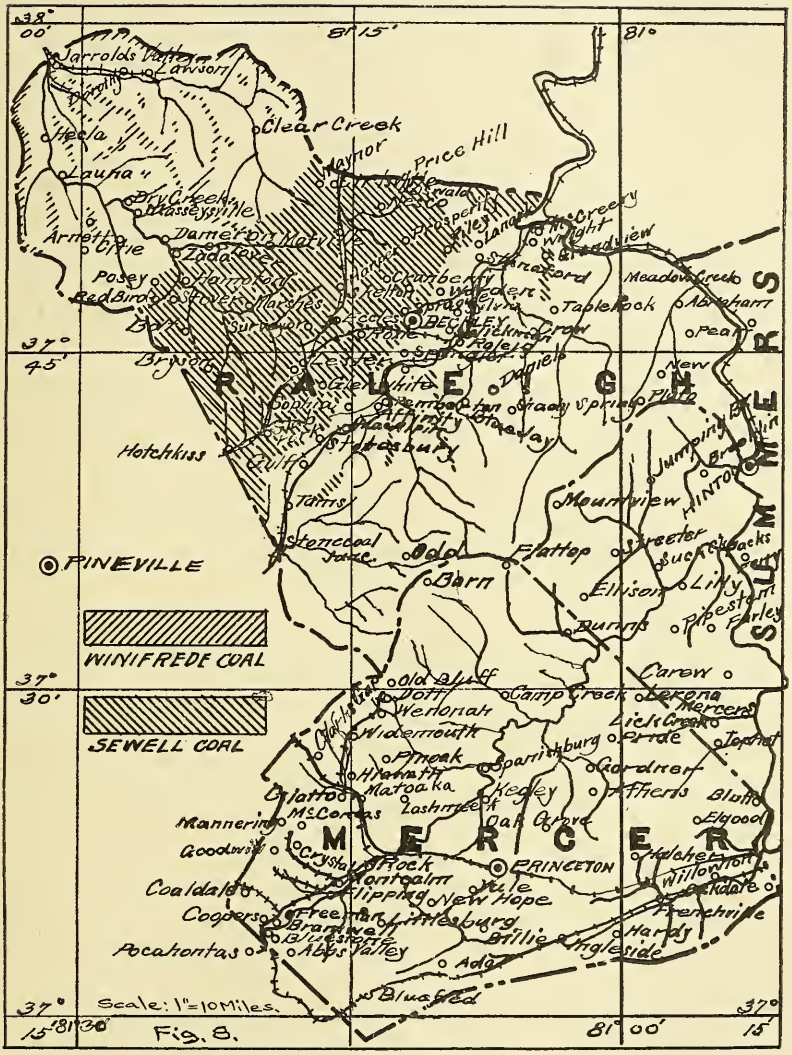

Figure 8.—Showing approximate minable area of the Winifrede and Sewell Coals.

at the end of this Chapter. Sections and analyses of this mine are also published in Bulletin 22, pages 287 and 1054, of the U. S. Bureau of Mines, and the latter (No. 34 in Bulletin 2, page 245) are republished under **No. 8** in the second table of analyses at the end of this Chapter.

McKell Coal & Coke Co., Graham Mine—No. 9 on Map II.

On Dunloup Creek, 2 miles south of Price Hill; at Tamroy; **Sewell Coal**; elevation, 2035′ B.; drift mine; butts, N. 20° W.; faces, N. 70° E.; greatest rise, southeast; thickness, 4′ 11″; section taken by Ray V. Hennen and published in Volume II(A), page 207, and analysis of sample on page 214; men employed, 60; capacity of mine, 350 tons; coal shipped East and West for steam purposes; Thomas Nichols, General Manager. For details see above page references.

The analysis of sample collected by Hennen (No. 14 in Bulletin 2, page 241) is republished under **No. 9** in the table at the end of this Chapter. Sections and analyses (No. 1 in Bulletin 2, page 243) of this mine are also published in Bulletin 22, page 285 and 1051, of the U. S. Bureau of Mines, and the latter are republished under **No. 9** in the second table of analyses at the end of this Chapter.

McKell Coal & Coke Co., Tamroy Mine—No. 10 on Map II.

On Dunloup Creek, 2.6 miles south of Price Hill; **Sewell Coal**; elevation, 2100′ B.; thickness, 4′ 4″; drift mine; section taken by Ray V. Hennen and published in Volume II(A), page 207, and analysis of sample on page 214; greatest rise, S. 45° E.; mine capacity, 500 tons; men employed, 70; coal shipped East and West for steam purposes; office, Glen Jean, W. Va. For details see above page references.

The analysis of sample collected by Hennen (No. 15 in Bulletin 2, page 241) is republished under **No. 10** in the table at the end of this Chapter. Sections and analyses (No. 18 in Bulletin 2, page 244) of this mine are also published in Bulletin 22, pages 286 and 1052, of the U. S. Bureau of Mines, and the latter are republished under **No. 10** in the second table of analyses at the end of this Chapter.

In passing from Mt. Hope to the head of Dunloup Creek, the Sewell Coal goes under water level about one-half mile southwest of Kilsyth, and at Price Hill, the shaft is 140 feet

deep. Then the creek changes to the southeast, and about 0.8 mile above the Fayette-Raleigh County Line, the coal emerges to daylight and rises faster than the bed of the stream, until at 0.6 mile south of Tamroy, near the head of the creek, where it goes under again. The following section was obtained by Krebs where the coal comes out of the creek:

McKell Coal & Coke Co. Exposure—No. 383 on Map II.

On west side of Kanawha, Glen Jean and Eastern Railroad, 0.6 mile south of Price Hill; **Sewell Coal**; elevation, 1860′ B.

			Ft.	In.
Sandstone roof				
Coal, gas, with sulphur streaks	1′	6″		
Slate, dark	0	10		
Coal, soft	0	6		
Coal, gas	3	1		
Shale, dark	1	1		
Coal, impure (to slate floor)	0	6	7	6

McKell Coal & Coke Co., Oswald No. 3 Mine. No. 11 on Map II.

On an east branch of Dunloup Creek, one mile southeast of Price Hill; **Sewell Coal**; elevation, 2030′ B.; butts, N. 20° W.; faces, N. 70° E.; coal is hauled from this drift to Oswald No. 1 tipple; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	3	7

New River & Pocahontas Consolidated Coal Co., Weirwood Mine—No. 12 on Map II.

On east side of Paint Creek, 0.5 mile north of Herberton; and 0.7 mile north of the Fayette-Raleigh County Line; shaft, 340 feet deep; elevation of coal, 1310′ L.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2′	2″		
Bone	0	2		
Coal, gas (to slate floor)	1	8	4	0

Greatest rise, southeast; butts, N. 30° W.; faces, N. 60° E., capacity of mine, 200 tons; number of men employed, 50; H. M. Bartolet, General Manager; main office, Charleston, W. Va.

New River Company, Prosperity Mine—No. 13 on Map II.

On Cranberry Creek of Piney Creek, 3.2 miles northwest of Beckley; Sewell Coal; shaft mine, 491.5 feet in depth; elevation of coal, 1915′ L.; thickness, 3′ 8″; section taken by Ray V. Hennen and published in Volume II(A), page 209, and analysis of sample on page 214; greatest rise, southeast; butts, N. 45° W.; faces, N. 45° E.; mine capacity, 300 tons; men employed, 50; coal shipped to tidewater for steam purposes; main office, Macdonald, W. Va.; S. A. Scott, General Manager. For details, see above page references.

The analysis of sample collected by Hennen (No. 20 in Bulletin 2, page 241) is republished under **No. 13** in the table at the end of this Chapter. Sections and analyses (No. 32 in Bulletin 2, page 245) of this mine are also published in Bulletin 22, pages 285 and 1051, of the U. S. Bureau of Mines, and the latter are republished under **No. 13** in the second table of analyses at the end of this Chapter.

New River Company, Cranberry Mine—No. 14 on Map II.

On Cranberry Creek, 2.9 miles northwest from Beckley; shaft mine, 446.5 feet deep; Sewell Coal; elevation of coal, 1947′ L.; thickness, 3′ 10½″; section of coal taken by Ray V. Hennen and published in Volume II(A), page 208, and analysis of sample on page 214; greatest rise, southeast; butts N. 45° W.; faces, N. 45° E.; capacity, 450 tons; men employed, 60; coal shipped East for steam purposes; main office, Macdonald, W. Va.; S. A. Scott, General Manager. For details, see above page references.

The analysis of sample collected by Hennen (No. 19 in Bulletin 2, page 241) is republished under **No. 14** in the table at the end of this Chapter. Sections and analyses of this mine are also published in Bulletin 22, pages 284-5 and 1048, of the U. S. Bureau of Mines, and the latter are republished under **No. 14** in the second table of analyses at the end of this Chapter.

New River Company, Skelton Mine—No. 15 on Map II.

On Cranberry Creek, 1.6 miles north of Beckley; drift mine; Sewell Coal; elevation, 2320′ L.; thickness, 3′ 8″, soft coal, with dark slate roof and fire clay floor; section by Ray V. Hennen, published on page 208 of Volume II(A), and analysis on page 214; greatest rise, southeast; butts, N. 30° W.; faces, N. 60° E.; mine not in operation; S. A. Scott, General Manager, Macdonald, W. Va. For details, see above page references.

The analysis of sample collected by Hennen (No. 18 in Bulletin 2, page 241) is republished under **No. 15** in the first table at the end of this Chapter.

New River Company, Sprague Mine—No. 16 on Map II.

On Little Whitestick Creek, 0.6 mile north of Beckley; slope mine; **Sewell Coal**; elevation, 2358′ L.; thickness, 4′ 3″; section taken by Ray V. Hennen and published in Volume II(A), page 209, and analysis on page 214; greatest rise, southeast; butts, N. 30° W.; faces, N. 60° E.; capacity, 250 tons; men employed, 65; coal shipped East for steam; S. A. Scott, General Manager, Macdonald, W. Va. For details, see above page references.

The analysis of sample collected by Hennen (No. 21 in Bulletin 2, page 241) is republished under **No. 16** in the first table of analyses at the end of this Chapter. Sections and analyses (No. 25 in Bulletin 2, page 244) of this mine are also published in Bulletin 22, pages 283 and 1045, of the U. S. Bureau of Mines, and the latter are republished under **No. 16** in the second table at the end of this Chapter.

West Virginia Coal Co., Ragland Mine—No. 17 on Map II.

On a branch of Cranberry Creek, 1 mile north of Skelton; **Sewell Coal**; elevation, 2150′ B.; section by Krebs; greatest rise, southeast; butts, N. 20° W.; faces, N. 70° E.; coal shipped East for steam purposes; capacity, 200 tons; men employed, 40; T. R. Ragland, Supt., Skelton, W. Va.

			Ft.	In.
1.	**Coal**, gas, soft (with slate roof)	1′ 0″		
2.	**Coal**, gas, harder (to fire clay floor).....	2 4	3	4

The analysis of a sample (476-K) collected from Nos. 1 and 2 of above section is published under **No. 17** in the first table at the end of this Chapter.

Lanark Coal & Coke Co., Mine No. 3—No. 18 on Map II.

On north side of Stanaford Branch, 0.6 mile northwest of Lanark P. O.; drift mine; **Sewell Coal**; thickness, 5′ 0½″; elevation, 2275′ B.; section taken by Ray V. Hennen and published in Volume II(A), page 208, and analysis on page 214; greatest rise, southeast; butts, N. 45° W.; faces, N. 45° E.; capacity, 200 tons; men employed, 45. For details, see above page references.

The analysis of sample collected by Hennen (No. 16 in Bulletin 2, page 241) is republished under **No. 18** in the first table at the end of this Chapter. Sections and analyses (Nos. 3 and 2 in Bulletin 2, page 243) of Mines No. 3 and 4 are also published in Bulletin 22, pages 286 and 1053, of the U. S. Bureau of Mines, and the latter are republished under **No. 18** in the second table at the end of this Chapter.

Stonewall Coal & Coke Co., Sewell Mine—No. 19 on Map II.

On Batoff Mountain, north of Piney Creek, 1.0 mile north of Stonewall; **Sewell Coal**; elevation, 2325′ B.; thickness, 4′ 9½″; section taken by Ray V. Hennen and published in Volume II(A), page 208, and analysis on page 214; greatest rise, southeast; butts, N. 40° W.; faces, N. 50° E.

The analysis of sample collected by Hennen (No. 17 in Bulletin 2, page 241) is republished under **No. 19** in the first table at the end of this Chapter.

The mine is now abandoned, as all the coal in this bed has been mined from the lease of the Stonewall Coal & Coke Company.

Piney Mining Company, Mine No. 3—No. 20 on Map II.

On north side of Griffith Branch of Piney Creek, at Riley; **Sewell Coal**; elevation, 2280′ B.; butts, N. 45° W.; faces, N. 45° E.; greatest rise, southeast; coal shipped East and West for steam purposes; capacity, 400 tons; men employed, 60; Jas. Sterrett, General Manager, Sanaford, W. Va.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	1′	6″		
Coal, gas, harder (to slate floor)	2	8	4	2

The analysis of a sample collected by the U. S. Bureau of Mines, Bulletin 22, page 290, as published in Bulletin 2, W. Va. Geological Survey, page 244, under No. 24, is republished under **No. 20** in the second table of analyses at the end of this Chapter.

Warden Local Mine Opening—No. 384 on Map II.

On north side of Piney Creek, 0.4 mile west of Warden; **Sewell Coal**; elevation, 2365′ B.; butts, N. 45° W.; faces, N. 45° E.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	4	0

Coal Exposure—No. 385 on Map II.

In county road, just west of Lanark; **Sewell Coal**; elevation, 2270′ B.; section by Teets.

	Ft.	In.
Coal, blossom (with shale roof and slate floor)...	4	0

Wm. McCall Local Mine Opening—No. 386 on Map II.

On the north side of Batoff Creek, 2.3 miles northwest of Wright; **Sewell Coal**; elevation, 2355′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal, gas (with shale roof and slate floor).....	4	2

Miller Local Mine Opening—No. 387 on Map II.

On the west side of New River, one mile northwest of Terry; **Sewell Coal**; elevation, 2355′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

		Ft.	In.
Coal, gas (with shale roof).....1′	4″		
Shale, gray.....1	5		
Coal, block, columnar (to slate floor) 1	10	4	7

B. H. White Local Mine—No. 388 on Map II.

At Beckley; **Sewell Coal**; elevation, 2350′ B.; capacity, 20 tons; men employed, 4; section by Krebs.

		Ft.	In.
Coal, gas, soft (with slate roof) 1′	2″		
Coal, gas, hard (to slate floor) 2	5	3	7

Raleigh Coal & Coke Co., Mine No. 5—No. 21 on Map II.

On north side of Whitestick Creek, 0.6 mile north of Mabscott; **Sewell Coal**; elevation, 2350′ B.; butts, N. 30° W.; faces, N. 60° E.; capacity, 50 tons; men employed, 10; coal shipped East and West for steam fuel; section by Krebs.

	Ft.	In.
Slate	1	6
Coal, gas, soft 1′ 2″		
Coal, gas, harder (to slate floor) 2 4	3	6

The analysis of a sample collected from the above mine by Ray V. Hennen and published in Volume II(A), page 214 (No. 22 in Bulletin 2, page 241), is republished under **No. 21** in the first table at the end of this Chapter. Sections and analyses (No. 30 in Bulletin 2, page 245) of this mine are also published in Bulletin 22, pages 283 and 1046, of the U. S. Bureau of Mines, and the latter are republished under **No. 21** in the second table of coal analyses at the end of this Chapter.

New River Company, Mabscott Mine—No. 22 on Map II.

At Mabscott; **Sewell Coal**; elevation, 2345′ B.; thickness, 4′ 8½″; section taken by Ray V. Hennen and published in Volume II(A), page 210, and analysis of sample on page 214; butts, N. 30° W.; faces, N. 60° E.; capacity, 400 tons; men employed, 60; coal shipped East and West for steam purposes; S. A. Scott, General Manager, Macdonald, W. Va. For details, see above page references.

The analysis of sample collected by Hennen (No. 23 in Bulletin 2, page 241) is republished under **No. 22** in the first table of analyses at the end of this Chapter. Sections and analyses of this mine are also published in Bulletin 22, pages 284 and 1047, of the U. S. Bureau of Mines, and the latter are republished under **No. 22** in the second table of analyses at the end of this Chapter.

Home Coal Company Mine—No. 23 on Map II.

Near Beckley Junction; **Sewell Coal**; elevation, 2260′ B.; thickness, 4′ 6″; section taken by Ray V. Hennen and published in Volume II(A), page 210, and analysis of sample on page 214; butts, N. 30° W.; faces, N. 60° E.; capacity, 100 tons; men employed, 20. For details, see above page references.

The analysis of sample collected by Hennen (No. 24 in Bulletin 2, page 241) is republished under **No. 23** in the first table of coal analyses at the end of this Chapter.

New River Company, Beckley Mine—No. 24 on Map II.

On north side of Whitestick Creek, at Wickham; **Sewell Coal**; slope mine; elevation, 2200′ L.; thickness, 4′ 6¼″; section taken by Ray V. Hennen and published in Volume II (A), page 211, and analysis of sample on page 214; butts, N. 30° W.; faces, N. 60° E.; mine capacity, 1000 tons; men employed, 200; coal shipped East and West for steam purposes. For details, see above page references.

The analysis of sample collected by Hennen (No. 25 in Bulletin 2, page 241) is republished under **No. 24** in the first table of analyses at the end of this Chapter. Sections and analyses of this mine are also published in Bulletin 22, pages 283 and 1046, of the U. S. Bureau of Mines, and the latter are republished under **No. 24** in the second table of coal analyses at the end of this Chapter.

T. H. Wickham Local Mine—No. 389 on Map II.

On south side of Whitestick Creek, 0.6 mile south of Mabscott; **Sewell Coal**; elevation, 2360′ B.; butts, N. 30° W.; faces, N. 60° E.; capacity, 30 tons; men employed, 6; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	4	0

Beaver Coal Company Prospect—No. 390 on Map II.

On Stover Fork of Craborchard Creek, 0.6 mile northeast of Craborchard P. O.; **Sewell Coal**; elevation, 2345′ B.; butts, N. 30° W.; faces, N. 60° E.; driven in 20 feet; section by Krebs.

	Ft.	In.
Coal, gas, visible (with sandstone roof).....	3	0

The Sewell Coal appears to get thinner in the southern part of Town District, and to be of very little commercial value, as is shown by the following exposure measured by Teets:

Coal Exposure—No. 391 on Map II.

In county road, one mile northwest of Abney; **Sewell Coal**; elevation, 2615′ B.

	Ft.	In.
Coal, impure (with shale roof and floor).....	1	6

Coal Exposure—No. 392 on Map II.

In county road, 0.4 mile northwest of Abney; **Sewell Coal**; elevation, 2600′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)...	1	6

Coal Exposure—No. 393 on Map II.

In county road, 0.5 mile southwest of Abney; **Sewell Coal**; elevation, 2595′ B.; section by Teets.

	Ft.	In.
Coal, impure, (with shale roof and slate floor)....	1	8

In addition to these sections of the Sewell Coal, other sections showing the depth and thickness of this bed are given in the records of the Diamond Core Test Holes published on pages 202 to 252 of this Report, and also in Core Tests Nos. 17, 30, 33 and 34, published in the General Sections on preceding pages. From these sections given, it will be noted that the Sewell Coal is a very important bed in Town District.

Clear Fork District, Raleigh County.

The **Sewell Coal** has not been found in Clear Fork by core test holes, to this date, as only three have been drilled thus far in the district. The test at Dorothy showed only a thin section of this bed, thus indicating that the coal appears to be too thin to be minable in the northern part of the district. It is possible that the coal may reach minable conditions in the southern part of the district.

Marsh Fork District, Raleigh County.

The Sewell Coal does not outcrop in Marsh Fork District, and the coal will have to be proved by core tests. Thus far only two tests (Nos. 4 and 5 on Map II) have been sunk, the records of which are given on pages 198-201 of this Report. These records show the Sewell Coal to be more than 3 feet thick in the southern part of the district, and indicate that a small area of the same is underlain with the Sewell Coal of sufficient thickness and purity to be minable.

Trap Hill District, Raleigh County.

The **Sewell Coal** lies under practically the whole of Trap Hill District, and outcrops for some distance at the head of Surveyor Creek, near Lester. A large number of core test holes have been drilled to prove this coal in Trap Hill District. The Sewell Coal rises out of Surveyor Creek, just north of Hoohoo, near where the following section was obtained by Krebs:

Rockhouse Fork Land Co. Local Fuel Opening. No. 394 on Map II.

On west side of Surveyor Creek, at Hoohoo; **Sewell Coal**; elevation, 2010′ B.; butts, N. 50° W.; faces, N. 40° E.

			Ft.	In.
Coal, gas (with slate roof)	0′	6″		
Slate	0	1		
Coal, gas	0	1		
Slate	0	2		
Coal	0	4		
Slate	0	8		
Coal (to slate floor)	0	7	2	5

Rockhouse Fork Land Co. Local Fuel Opening. No. 395 on Map II.

On head of Surveyor Creek, 1.2 miles south of Lester; **Sewell Coal**; elevation, 2175′ B.; butts, N. 50° W.; faces, N. 40° E.; section by Krebs.

	Ft.	In.
Coal, gas (with dark shale roof and slate floor)	1	6

New River Collieries Co., Eccles No. 1 Mine (Abandoned). No. 25 on Map II.

At mouth of Jehu Branch, at Eccles; **Sewell Coal**; shaft mine; elevation, 1920′ B.; butts, N. 30° W.; faces, N. 60° E.; F. P. Bayles, General Manager, Eccles, W. Va.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2′	0″		
Coal, impure	1	1		
Coal, gas	2	6	5	7

The coal from this mine was sampled by the U. S. Bureau of Mines and the results of the analysis published in Bulletin 22, pages 285 and 1050. The composition of a composite sample is republished under **No. 25** in the second table of coal analyses at the end of this Chapter.

New River Collieries Co., Mine No. 6—No. 26 on Map II.

On east side of Millers Camp Branch, 0.6 mile south of Harper; **Sewell Coal**; shaft mine; elevation, 1850′ B.; butts, N. 40° W.; faces, N. 50° E.; capacity, 400 tons; men employed, 80; coal shipped East and West for steam purposes; section by Krebs.

				Ft.	In.
1.	**Coal**, impure	0′	6″		
2.	**Coal**, gas	1	3		
3.	Slate, 0″ to	0	1		
4.	**Coal**, gas (to fire clay floor)	3	2	5	0

The analysis of a sample (500-K) collected from Nos. 2 and 4 is published under **No. 26** in the first table of coal analyses at the end of this Chapter.

In addition to the sections of the Sewell Coal just given, a number of sections will be found in the records of the core test holes published on pages 252 to 284 of this Report.

Slab Fork District, Raleigh County.

The Sewell Coal occurs near the tops of the hills in the northern part of this district, but it is usually thin and of little commercial value.

Coal Opening—No. 396 on Map II.

On a branch of Low Gap Branch of Slab Fork, 1.3 miles south of Jenny Gap Station; **Sewell Coal**; elevation, 2135′ B.; butts, N. 60° W.; faces, N. 30° E.; section by Teets.

			Ft.	In.
Slate, gray			2	2
Coal, gas	1′	6 ″		
Coal, bony	0	1½		
Coal (to slate floor)	0	9	2	4½

Coal Exposure—No. 397 on Map II.

On the Devils Backbone, in county road, at the head of the Left Fork of Tommy Creek; **Sewell Coal**; elevation, 2910′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	3	1

Coal Exposure—No. 398 on Map II.

In county road 1.2 miles south of Odd; **Sewell Coal**; elevation, 3050′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor)	1	9

Coal Exposure—No. 399 on Map II.

In county road, 1.2 miles south of Odd; **Sewell Coal**; elevation, 3096′ L.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	3

Coal Exposure—No. 400 on Map II.

In county road, one mile south of Odd; **Sewell Coal**; elevation, 3110′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and floor)	1	1

Coal Exposure—No. 401 on Map II.

In county road on Bluff Mountain at head of Bluff Fork, 1.9 miles south of Egeria; **Sewell Coal**; elevation, 3305′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor)	1	10

The Sewell Coal is given in core test hole, J. W. Moore et al. No. 3 (136), on page 78, as 1 ft. 3 in. thick, at depth of 100′ 7″, and in core test hole (151), page 287, as 3 ft. 5 in. thick, being 244′ 5″ deep.

Shady Spring District, Raleigh County.

Very little Sewell Coal is found in Shady Spring District, there being small disconnected patches in the western and southern parts of the same. A few sections were measured, as follows:

Price Heirs Local Fuel Opening—No. 402 on Map II.

One mile almost due west of Ghent; **Sewell Coal**; elevation, 3025′ B.; section by Teets; butts, N. 25° W.; faces, N. 65° E.; greatest rise, southeast.

			Ft.	In.
Coal, gas (with slate roof).....	2′	2″		
Shale, gray.....	1	7		
Coal (to slate floor).....	1	1	4	10

Fink Local Fuel Opening—No. 403 on Map II.

On the waters of Oak Creek of Glade Creek, 1.0 mile northwest of Ghent; **Sewell Coal**; elevation, 3070′ B.; butts, N. 25° W.; faces, N. 65° E.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof).....	2′	2″		
Shale, gray.....	0	11		
Coal, gas (to slate floor).....	1	1	4	2

Glade Creek & Raleigh R. R. Co. Local Fuel Opening. No. 404 on Map II.

On waters of Oak Creek of Glade Creek, one mile northwest of Ghent; **Sewell Coal**; elevation, 3080′ B.; section by Teets.

Coal (with shale roof and slate floor)..... 2 Ft. 9 In.

Price Heirs Coal Exposure—No. 405 on Map II.

On Bowyer Creek Road, 0.6 mile east of Bowyer School; **Sewell Coal**; elevation, 2950′ B.; section by Krebs.

Coal, gas (with slate roof and floor)..... 3 Ft. 0 In.

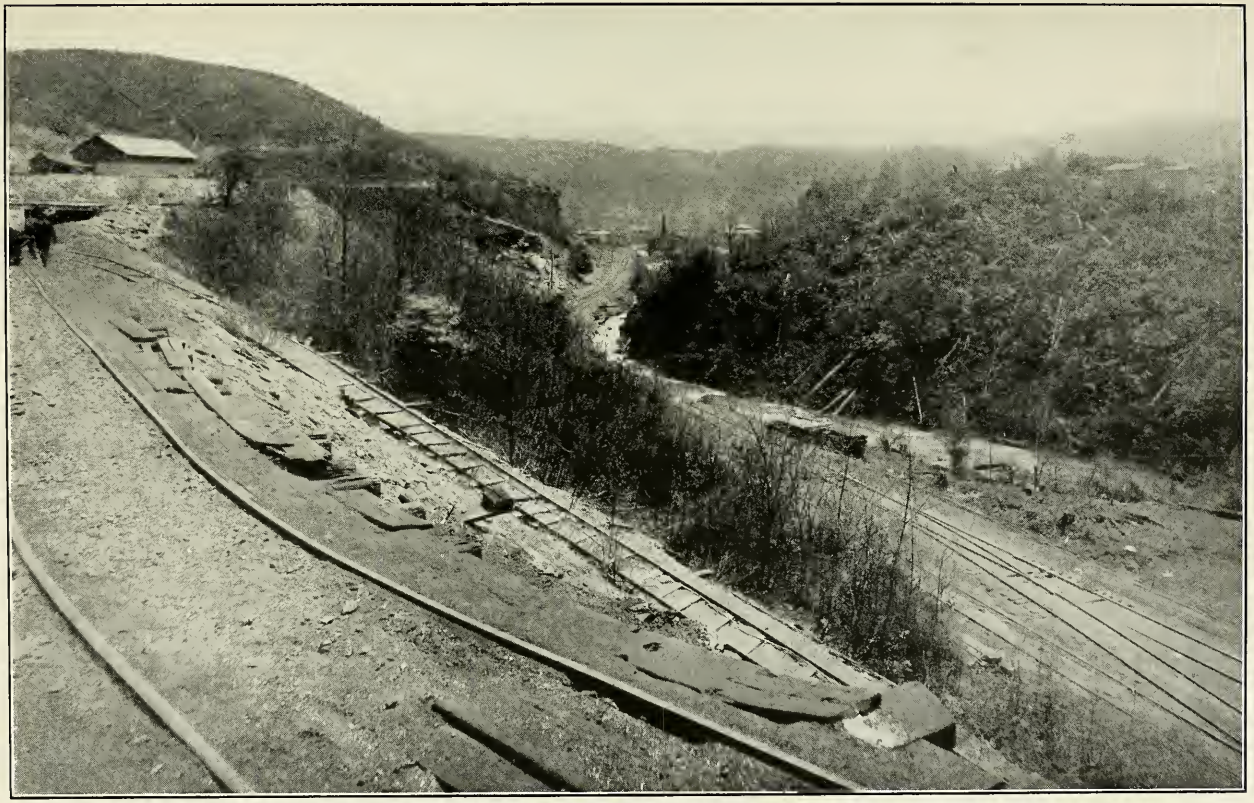

PLATE XXII.—View near Raleigh Station showing the New River Group on upper Piney Creek.

Local Coal Prospect—No. 406 on Map II.

On waters of Oak Creek of Glade Creek, 1.4 miles northwest of Ghent; **Sewell Coal**; elevation, 3060' B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs

			Ft.	In
Coal, gas (with dark shale roof)	1'	10"		
Shale	0	6		
Coal, gas (to slate floor)	2	0	4	4

No Sewell Coal exposures occur in **Richmond District**, nor were any Sewell Coal openings found in **Summers or Mercer Counties**, as the coal just caps the top of Bluff Mountain on the Raleigh-Mercer County Line.

Quantity of Sewell Coal Available.

Based on the evidence of the preceding pages, the following estimate is made of the probable amount of Sewell Coal. The crop is shown on Map II, and the area was determined by Teets with planimeter:

Probable Amount of Sewell Coal.

Raleigh County by Districts.	Thickness of Coal (Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	2.5	10	6,400	696,960,000	27,878,400
Marsh Fork	3.0	5	3,200	418,176,000	16,727,040
Town	4.0	57	36,480	6,356,275,200	254,251,008
Trap Hill	3.5	54	34,560	5,269,017,600	210,760,704
Slab Fork	1.5	21	13,440	878,169,600	35,126,784
Shady Spring	2.5	5	3,200	348,480,000	13,939,200
Totals		152	97,280	13,967,078,400	558,683,136

THE WELCH COAL.

The **Welch Coal** in **Raleigh County** is usually thin and of very little economic value. In addition to the sections already given, the following were obtained:

Coal Exposure—No. 407 on Map II.

In county road, 1.1 miles southwest of Piney Gap School; Slab Fork District; **Welch Coal**; elevation, 2670′ B.; section by Teets.

	Ft.	In.
Coal, blossom (with slate roof and floor).....	1	10

Coal Exposure—No. 408 on Map II.

In county road, 1.6 miles northwest of Bowyer School; Shady Spring District; **Welch Coal**; elevation, 2600′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	1

Mercer County.

Coal Exposure—No. 408A on Map II.

In county road on Flattop Mountain, at head of Flipping Creek; **Welch Coal**; elevation, 3040′ B.; section by Teets; butts, N. 36° W.; faces, N. 54° E.

	Ft.	In.
Coal, weathered (with sandstone and shale roof and slate floor).....	2	1

Coal Exposure—No. 408B on Map II.

In county road on Flattop Mountain, 1.2 miles west of Peters Gap; **Welch Coal**; elevation, 3075′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	1	6

No estimate will be made of the minable coal in this bed in the Raleigh-Mercer-Summers area, as not enough sections were found to fully determine its thickness and purity; but possibly when the thicker coals are all mined this bed may be utilized.

THE LITTLE RALEIGH COAL.

The **Little Raleigh Coal** appears to thicken in the southern part of Raleigh County and lose some of its usual slates and impurities. It is not commercially mined at present.

Slab Fork District, Raleigh County.

The Little Raleigh Coal crops along the road in the southern part of Slab Fork District, where it was measured, as follows:

Coal Exposure—No. 409 on Map II.

In county road, 1.3 miles northwest of Piney Gap School; **Little Raleigh Coal**; elevation, 2595′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	8

Coal Exposure—No. 410 on Map II.

On the north side of Tommy Creek, on the west end of Devils Backbone; **Little Raleigh Coal**; elevation, 2750′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	1

Beaver Coal Co. Exposure—No. 411 on Map II.

On west side of Winding Gulf, 0.5 mile west of Lynwinn; **Little Raleigh Coal**; elevation, 2385′ B.; section by Krebs.

	Ft.	In.
Coal, gas (with sandstone roof and slate floor)...	1	0

Coal Exposure—No. 412 on Map II.

In county road, 0.5 mile west of Table Rock; **Little Raleigh Coal**; elevation, 2715′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	2	5

Fuller & Ewing Opening—No. 413 on Map II.

On head of first Righthand Fork of Mill Creek, 1.9 miles south of Grandview; **Little Raleigh Coal**; elevation, 2620′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	1	6

Coal Exposure—No. 414 on Map II.

In county road, 0.7 mile northwest of Ghent; **Little Raleigh Coal**; elevation, 2960′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	0

Coal Exposure—No. 415 on Map II.

In county road, 1.1 miles northeast of Brammer School, on Beaver Creek; **Little Raleigh Coal**; elevation, 2920′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	2	6

Coal Exposure—No. 416 on Map II.

On road, 0.5 mile west of Low Gap School, and two miles southwest of Ghent; **Little Raleigh Coal**; elevation, 3000′ B.; section by Krebs.

	Ft.	In.
Coal, impure (with buff shale roof and dark shale floor)	2	6

Mercer County.

Coal Exposure—No. 416A on Map II.

In county road on Flattop Mountain, 0.8 mile northeast of Clarks Gap; **Little Raleigh Coal**; elevation, 3065′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)...	0	6

Coal Exposure—No. 416B on Map II.

In county road on Flattop Mountain, 1.2 miles west of Peters Gap; **Little Raleigh Coal**; elevation, 3050′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	8

Coal Exposure—No 416C on Map II.

On the head of Little Fork of Elkhorn Creek near the Mercer-Wyoming County Line; **Little Raleigh Coal**; elevation, 2910′ B.; section by Teets.

			Ft.	In.
Coal, hard (with slate roof)....0′	8″			
Coal, gas.....1	6			
Slate, gray.....0	1			
Coal (to slate floor).....0	10	.....	3	1

Coal Exposure—No. 416D on Map II

In county road on Flattop Mountain, 2.2 miles east of Maybeury; **Little Raleigh Coal**; elevation, 2940′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	2	3

No estimate will be made of the available coal tonnage of the Little Raleigh Coal in the area discussed in this Report, owing to its impurity and the irregularity of its sections.

THE BECKLEY COAL.

The Beckley Coal is the most important coal bed in Raleigh County, and the commercial bed from which more than 60 per cent. of all the coal produced in Raleigh County is mined. Its thickness, purity and quality make it a very desirable fuel, and one that finds a ready sale in the markets, as a steam producer. Sections will now be given of this bed measured at different points in the area.

Clear Fork District, Raleigh County.

The **Beckley Coal** has not been prospected for in Clear Fork District, but in all probabilities it is thin and impure and of no commercial value.

Marsh Fork District, Raleigh County.

In Marsh Fork District, the Beckley Coal is in all probability thin and of no commercial value. It will be found 600 to 800 feet under water level in the southern part of the district.

Town District, Raleigh County.

The Beckley Coal was first mined, on a commercial scale, in Town District, by the Raleigh Coal & Coke Company, at the mines on Piney Creek, on completion of the Piney Branch of the Chesapeake and Ohio Railway.

Raleigh Coal & Coke Co., Mine No. 1—No. 27 on Map II.

On north side of Whitestick Creek, one mile northwest of Raleigh; **Beckley Coal**; elevation, 2220′ B.; butts, N. 60° W.; faces, N. 30° E.; capacity, 600 tons; men employed, 80; coal shipped East and West for steam purposes; Ernest Chilson, General Manager, Raleigh, W. Va. Section by U. S. Bureau of Mines, as published in Bulletin 22, pages 288, and 1056.

	A. Lab. No. 8252. Ft.	In.		B. Lab. No. 8253. Ft.	In.	
Sandstone and blue argillaceous shale roof.....						
Bony coal (not sampled).....0		1½		0	2	
Coal (to soft shale floor).....4	7	4′	8½″	4	10	5′ 0″

The composition of the composite sample (as given in Bulletin 2, page 236, under No. 19) from the two sections is republished under **No. 27** in the second table of analyses at the end of this Chapter. Additional sections and analyses by the U. S. Bureau of Mines from the above mine are given in Bulletin 22, pages 291 and 1066, and in Bulletin 85, pages 128 and 380. The analyses are republished under **No. 27** in the table above mentioned.

Raleigh Coal & Coke Co., Mine No. 2—No. 28 on Map II.

On north side of Whitestick Creek, 1.1 miles northwest of Raleigh; **Beckley Coal**; elevation, 2200′ B.; butts, N. 58° W.; faces, N. 32° E.; capacity, 1000 tons; men employed, 150; coal shipped East and West for steam purposes; Ernest Chilson, General Manager, Raleigh, W. Va. Sections by U. S. Bureau of Mines, as published in Bulletin 22, pages 288 and 1057:

	A. Lab. No. 8254. Ft.	In.		B. Lab. No. 8255. Ft.	In.	
Sandstone and blue argillaceous shale roof.....						
Bony coal (not sampled).....0	2			0	1	
Coal (to soft shale floor).....5	2	5′	4″	3	11	4′ 0″

The composition of a composite sample (as given in Bulletin 2, page 236, under No. 20) from the two sections is republished under **No. 28** in the second table of analyses at the end of this Chapter. Additional sections and analyses by the U. S. Bureau of Mines from the above mine are given in Bulletin 22, pages 291 and 1066. The analyses are republished under the same mine number in the table mentioned.

Raleigh Coal & Coke Co., Mine No. 3—No. 29 on Map II.

On the north side of Piney Creek, at Raleigh; **Beckley Coal**; elevation, 2240′ B.; thickness, 5′ 1″; section taken by Ray V. Hennen and published in Volume II (A), page 188, and analysis on page 166; butts, N. 50° W.; faces, N. 40° E.; capacity, 1100 tons; men employed, 160; coal shipped East and West for steam purposes; Ernest Chilson, General Manager, Raleigh, W. Va. For details, see above page references.

The analysis of sample collected by Hennen (No. 31 in Bulletin 2, page 218) is republished under **No. 29** in the first table of coal analyses at the end of this Chapter. Sections and analyses (No. 26 in Bulletin 2, page 236) of this mine are also published in Bulletin 22, pages 288 and 1057, and Bulletin 85, pages 128 and 380, of the U. S. Bureau of Mines. The analyses of the composite samples are republished under **No. 29** in the second table of analyses at the end of this Chapter.

Raleigh Coal & Coke Co., Mine No. 6—No. 30 on Map II.

On the north side of Piney Creek, one mile southwest from Raleigh; **Beckley Coal**; elevation, 2200′ B.; butts, N. 50° W.; faces, N. 40° E.; coal shipped East and West for steam purposes; Ernest Chilson, General Manager, Raleigh, W. Va.; section by Teets.

			Ft.	In.
Coal, soft (with slate roof)	2′ 10 ″			
Coal, bony	0 1½			
Coal, soft (to slate floor)	2 4	.....	5	3½

The coal in this mine was sampled by the U. S. Bureau of Mines and the results published in Bulletin 22, pages 287-8 and 1055. The composition of a composite sample (No. 25 in Bulletin 2, page 236) is republished under **No. 30** in the second table of analyses at the end of this Chapter.

Piney Mining Company, Mine No. 1—No. 31 on Map II.

On the west side of Piney Creek, near Stanaford; **Beckley Coal**; elevation, 2205′ B.; butts, N. 36° E.; faces, N. 54° W.; greatest rise, southeast; James Sterrett, General Manager, Stanaford, W. Va.; measurements taken in room No. 5, 7th Right Entry; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′ 7″			
Gray band	0 3			
Coal (to slate floor)	2 5	.....	5	3

Sections and analyses (No. 27 in Bulletin 2, page 237) of the coal from this mine are published in Bulletin 22, pages 289-90 and 1061, of the U. S. Bureau of Mines, and the analyses are republished under **No. 31** in the second table at the end of this Chapter.

Piney Mining Company, No. 2 Mine—No. 32 on Map II.

On the west side of Piney Creek, near Stanaford; **Beckley Coal**; elevation, 2220′ B.; butts, N. 49° W.; faces, N. 41° E.; greatest rise, southeast; men employed on Nos. 1 and 2 mines, 150; daily output, 600 tons; use, steam coal; electric and mule haulage; section measured in air course No. 2; James Sterrett, General Manager, Stanaford, W. Va.; section by Teets.

		Ft.	In.
Coal, soft (with slate roof)	1′ 6″		
Slate	0 0½		
Coal	0 4		
Slate	0 0½		
Coal, columnar	2 0		
Coal (to slate floor)	1 6	5	5

The analysis of a sample collected by Ray V. Hennen and published in Volume II(A), page 166 (No. 30 in Bulletin 2, page 218), is republished in the first table of analyses under **No. 32.** The analyses of samples collected by the U. S. Bureau of Mines (No. 28 in Bulletin 2, W. Va. Geological Survey, page 237) published in Bulletin 22, page 290, are republished under **No. 32** in the second table of analyses at the end of this Chapter.

Piney Mining Company, Mine No. 4—No. 33 on Map II

On the north side of Knob Branch of Piney Creek, 1.0 mile east of Riley; **Beckley Coal**; elevation, 2220′ B.; butts and faces, irregular; greatest rise, irregular, but generally to southeast; number of men employed, 100; daily output, 400 tons; use, domestic and steam; mule and electric haulage; section taken in No. 6 Left Third East, by Teets.

		Ft.	In.
Coal, gas (with slate roof)	0′ 6″		
Coal, gas, columnar	3 0		
Coal, gas (to slate floor)	2 0	5	6

The analysis of a sample collected by Ray V. Hennen from the above mine, as given in Volume II(A), page 166 (No. 29 in Bulletin 2, page 218), is republished under **No. 33** in the first table of analyses at the end of this Chapter. Sections and analyses (No. 29 in Bulletin 2, page 237) of this mine are also published in Bulletin 22, pages 291 and 1064, of the U. S. Bureau of Mines, and the analyses are republished under the same number in the second table of analyses.

Lilly Mining Company, Mine No. 5—No. 34 on Map II.

On west side of Piney Creek, about 1.8 miles east of Beckley; **Beckley Coal**; elevation, 2220′ B.; butts, N. 24° W.; faces, N. 66° E.; greatest rise, southeast; men employed, 40; daily output, 200 tons; shipped East and West for steam and domestic uses; mule haulage; W. H. Hackworth, Superintendent, authority for data; section by Teets.

Coal, gas (with slate roof and floor)..... 5 Ft. 8 In.

In the extreme southwestern portion of Town District, the Beckley Coal is reached by shaft and mined on a commercial scale; on the extreme southern part of the district, on Winding Gulf, it is reached by drift mines. At Pemberton, the Beckley Coal outcrops near the creek level and is mined by a slope, where Teets reports the following:

Pemberton Fuel Company Mine—No. 35 on Map II.

On Soak Creek of Piney Creek, at Pemberton; **Beckley Coal**; elevation, 2257′ L.; butts, N. 41° W.; faces, N. 49° W.; greatest rise, southeast; men employed, 40; daily output, 175 tons; shipped East for domestic and steam purposes; Frank Beard, Mine Foreman, authority for data; section by Teets.

			Ft.	In.
Coal (with sandstone roof).....	2′	4 ″		
Bone	0	3		
Coal	1	6		
Bone	0	0½		
Coal (to slate floor).....	1	0	5	1½

Pemberton Coal & Coke Co., Sophia Mine—No. 36 on Map II.

On Soak Creek of Piney Creek, at Affinity; **Beckley Coal**; elevation, 2225′ B.; butts and faces, irregular; slope mine, vertical distance 64 feet; section measured in 2nd off First North; W. A. Phillips, President, Mt. Carmel, Pa.; section by Teets.

Coal (with slate roof and floor)	4 Ft. 2 In.

The analysis of a sample published by the U. S. Bureau of Mines in Bulletin 22, page 289, is republished under **No. 36** in the second table of analyses at the end of this Chapter.

Pemberton Coal & Coke Co., Big Stick Mine. No. 37 on Map II.

On north side of Winding Gulf, 0.3 mile west of Hotcoal; **Beckley Coal**; elevation, 2079′ L.; butts, N. 60° W.; faces, N. 30° E.; capacity, 800 tons; men employed, 140; coal shipped East for steam purposes; W. A. Phillips, President, Mt. Carmel, Pa.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	4′	0″		
Bony coal	0	3		
Coal (to slate floor)	2	0	6	3

The analysis of a sample of coal collected from this mine by the U. S. Bureau of Mines, published in Bulletin 85, pages 127 and 379, is republished under **No. 37** in the second table of analyses at the end of this Chapter.

Gulf Coal Company, Mine No. 2—No. 38 on Map II.

On south side of Winding Gulf at Hotcoal; **Beckley Coal**; elevation, 2192′ L.; butts, N. 60° W.; faces, N. 30° E.; capacity, 600 tons; men employed, 100; coal shipped East for steam purposes; W. P. Tams, Jr., President, Tams, W. Va.; section by Krebs.

			Ft.	In.
Slate roof full of plant fossils				
Coal, gas	3′	5″		
Bony coal	0	1		
Coal, gas	0	6	4	0

Gulf Coal Company, Mine No. 1—No. 39 on Map II.

On south side of Winding Gulf at Hotcoal; **Beckley Coal**; elevation, 2149′ L.; butts, N. 60° W.; faces, N. 30° E.; section by Krebs.

			Ft.	In.
Slate roof full of plant fossils				
Coal, gas	3′	2″		
Bony coal	0	2		
Coal, gas (to slate floor)	0	8	4	0

Mines Nos. 1 and 2 of the Gulf Coal Co. are connected and tipple is located at Mine No. 1.

E. E. White Coal Co., Glen White Shaft—No. 40 on Map II.

On Shockley Branch, at Glen White; shaft mine; depth, 309 feet; **Beckley Coal**; elevation, 1865′ B.; butts, N. 60° W.; faces, N. 30° E.; capacity, 1800 tons; men employed, 350; coal shipped to tidewater for steam purposes; E. E. White, General Manager, Glen White, W. Va. Section by Krebs, measured on 2nd Panel Airway of 5th Left Entry:

			Ft.	In.
Draw slate (with sandstone cover)			1	0
Coal, gas, soft	3′	0″		
Coal, gas, harder	1	0		
Coal, gas (to slate floor)	1	4	5	4

Another section measured on new haulway near shaft bottom shows the following:

			Ft.	In.
Slate (with sandstone cover)			0	8
Coal, gas	6′	6″		
Slate, dark coal streaks	1	11		
Coal, gas (to slate floor)	3	0	11	5

The analysis (No. 16 in Bulletin 2, page 214) of sample of coal from this mine by the U. S. Bureau of Mines, published in Bulletin 22, pages 285 and 1050, is republished under **No. 40** in the second table at the end of this Chapter.

Woodpeck Coal Company Mine—No. 41 on Map II.

On west side of Piney Creek, at Woodpeck; **Beckley Coal**; elevation, 2300′ B.; butts, N. 45° W.; faces, N. 45° E.; capacity, 200 tons; men employed, 60; coal shipped to tidewater for steam purposes; Fred Wood, General Manager, Woodpeck, W. Va.; section by Teets.

Coal, gas (with slate roof and floor)..... 4 Ft. 2 In.

In addition to the sections of the Beckley Coal already given, the thickness and depth of this coal will be found in the records of core test holes published for Town District on pages 202 to 252.

Trap Hill District, Raleigh County.

The Beckley Coal attains its maximum thickness in Trap Hill District and is mined on a commercial scale by the New River Collieries Company. The coal does not outcrop in the district but has been tested by drilling core test holes and is mined by shaft mines.

New River Collieries Co., Mine No. 1—No. 42 on Map II.

On Jehu Branch near its mouth at Eccles; **shaft mine**; depth, 421 feet; elevation of **Beckley Coal**, 1689.5′ B.; top of shaft, 2110.5′ L.; butts, N. 45° W.; faces, N. 45° E.; F. P. Bayles, General Manager, Eccles, W. Va. Section taken by Ray V. Hennen and published in Volume II (A), page 188, and analysis of sample on page 166. For details, see these references.

The analysis of sample collected by Hennen (No. 32 in Bulletin 2, page 218) is republished under **No. 42** in the first table of analyses at the end of this Chapter. The mine is abandoned for the present and the coal is taken out through shaft No. 3.

New River Collieries Co., Mine No. 3—No. 43 on Map II.

On east side of Millers Camp Branch, 0.6 mile north of Eccles; **Beckley Coal**; shaft mine; elevation of top of shaft, 2119.8′ L.; capacity, 1200 tons; butts, N. 45° W.; faces, N. 45° E.; men employed, 200; coal shipped East and West for steam purposes; F. P. Bayles, General Manager, Eccles, W. Va.; sections by Krebs.

			Ft.	In.
Coal, gas (with sandstone roof)	5′	0″		
Slate, 10″ to	0	0		
Coal, gas (to slate floor)	4	0	9	0

Another section shows as follows:

			Ft.	In.
Coal, gas, soft (with slate roof)	5′	0″		
Coal, gas, hard (to slate floor)	3	0	8	0

The measurements taken by Clark & Krebs, Engineers, for the Company, from April 1, 1914, to April 1, 1915, in different parts of Mines Nos. 3 and 5, give the following interesting data:

Total number of places measured	476
Total average thickness of sections	101.3 inches
Total average impurities	7.7 inches
Total average clean coal	93.6 inches

New River Collieries Co., Mine No. 5—No. 44 on Map II.

On east side of Millers Camp Branch, 1 mile north of Eccles; **Beckley Coal**; shaft mine; elevation of top of shaft, 2119.8′ L.; butts, N. 45° W.; faces, N. 45° E.; capacity, 1000 tons; men employed, 180; coal shipped East to tidewater for steam purposes; F. P. Bayles, General Manager, Eccles, W. Va.; section by Krebs.

			Ft.	In.
Slate (with sandstone cover) 1″ to	0′	0″		
Coal, gas	4	8		
Slate, 8″ to	0	0		
Coal (to slate floor)	3	4	8	0

In addition to the sections of the Beckley Coal in the two commercial mines of the New River Collieries Company, other sections and depths of this coal are given in the many diamond core test holes already published on pages 252 to 284 of this Report. These sections prove that a large area of Beckley Coal occurs in Trap Hill District.

Slab Fork District, Raleigh County.

Slab Fork District lies south of Trap Hill District and is eroded with V-shaped valleys by the tributaries of the Guyandot River, so that the Beckley Coal outcrops over a consider-

able area of the district. A number of commercial mines are located in this district, having a large tonnage monthly.

Slab Fork Coal Co., Mine No. 2—No. 45 on Map II.

On south side of Slab Fork, 0.5 mile east of Slab Fork P. O.; **Beckley Coal**; drift mine; elevation, 1930′ B.; thickness of coal varies from 3′ 8″ to 6′ 0″; butts, N. 40° W.; faces, N. 50° E.; capacity, 300 tons; men employed, 60; Gaston Caperton, General Manager, Slab Fork, W. Va.; section by Krebs.

			Ft.	In.
Coal (with slate roof)	0′	5½″		
Slate	0	5		
Coal, gas	0	11½		
Coal, bony	0	2½		
Coal, gas (to slate floor)	3	8	5	8½

Sections and analyses of the coal from this mine are published in Bulletin 85, pages 129 and 381, and Bulletin 22, page 289, (No. 24 in Bulletin 2, page 236) of the U. S. Bureau of Mines, and the analyses are republished under **No. 45** in the second table at the end of this Chapter.

Slab Fork Coal Co., Mine No. 3—No. 46 on Map II.

On east side of Slab Fork, 0.6 mile east of Slab Fork P. O.; **Beckley Coal**; drift mine; elevation, 1950′ B. Coal varies from 4′ 7″ to 8′ 0″ in thickness; butts, N. 40° W.; faces, N. 50° E.; coal shipped East to tidewater for steam purposes; W. Gaston Caperton, General Manager, Slab Fork, W. Va.; sections by Krebs.

Section in "B" Entry:			Ft.	In.
Coal, gas (with slate roof)	0′	3 ″		
Slate	0	1		
Coal, gas	1	0		
Slate, 0″ to	0	0½		
Coal, gas (to slate floor)	3	2½	4	7

Section in "A" Entry:			Ft.	In.
Coal (with slate roof)	0′	0¼″		
Slate	0	2		
Coal, gas	0	3		
Slate	0	1		
Coal, gas	0	10½		
"Mother" coal, 0″ to	0	0½		
Coal, gas (to slate floor)	4	4	5	9¼

Sections Showing
The Beckley and Fire Creek Seams of Coal
in the Mines of
The E E. White Coal Co. and The Slab Fork Coal Co.
in Raleigh County

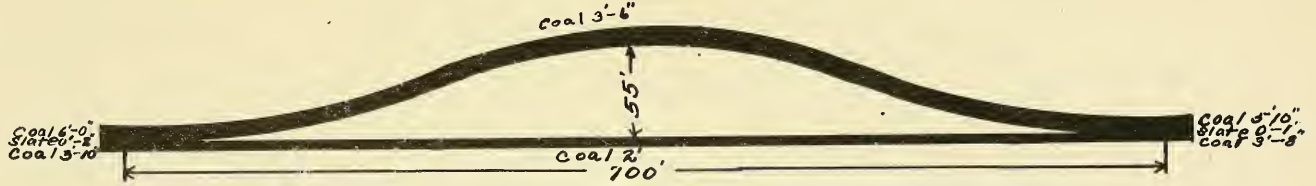

Fig. 5 Section in the Glen White Mine, E. E. White Coal Co.

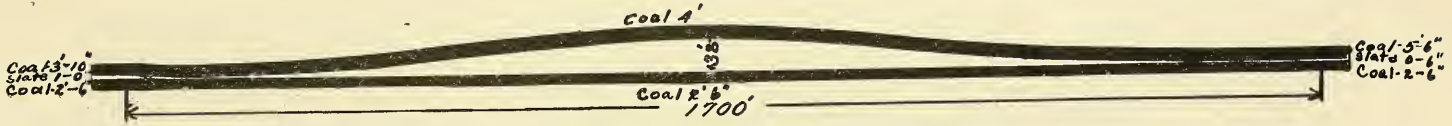

Fig. 6 Section in Mine No. 3, Slab Fork Coal Co.

Section in No. 1 Entry:			Ft.	In.
Coal (with 2" draw slate)	0′	2 "		
Slate	0	1		
Coal, gas	1	3		
"Mother" coal, ½" to	0	0		
Coal, gas	3	2		
Bony coal, ½" to	0	1		
Coal, gas	2	11		
Slate, 8" to	1	0		
Coal, gas	3	0		
Slate	0	0½		
Coal (to slate floor)	0	3	11	11½

This last section gives the lower, or Fire Creek bed, showing the interval between it and the Beckley, according to Hennen, only one foot at this point.

Sections and analyses of the coal from this mine are published in Bulletin 22, pages 289 and 1058, and Bulletin 85, pages 129 and 382, of the U. S. Bureau of Mines, and the analyses are republished under **No. 46** in the second table at the end of this Chapter.

Slab Fork Coal Co., Mine No. 5—No. 47 on Map II.

On south side of Slab Fork, at Slab Fork P. O.; **Beckley Coal**; drift mine; elevation, 1950′ B.; butts, N. 40° W.; faces, N. 50° E.; capacity, 500 tons; men employed, 80; coal shipped East to tidewater for steam purposes; W. Gaston Caperton, General Manager, Slab Fork, W. Va.; Nos. 1 to 5 are not mined in the rooms but are removed in the entries to get sufficient height; section by Krebs in head of main entry.

				Ft.	In.
1.	Coal and slate interlaminated	0′	4 "		
2.	Coal, impure	0	0½		
3.	Coal and slate interlaminated	0	3		
4.	Coal, impure	0	0½		
5.	Slate, dark	0	5		
6.	Coal, gas	0	2		
7.	Slate	0	2½		
8.	Coal, gas	1	2		
9.	Slate, 0" to	0	0½		
10.	Coal, gas (to slate floor)	3	5	6	1

Sections and analyses of this mine are published in Bulletin 85, pages 129 and 382, of the U. S. Bureau of Mines, and the latter are republished under **No. 47** in the second table of analyses at the end of this Chapter.

The Slab Fork Coal Company has driven entries off each of its mines through the hill to the waters of Winding Gulf and its tributaries.

Slab Fork Coal Co., Mine No. 6—No. 48 on Map II.

On west side of Bailey Branch of Winding Gulf, 1.1 miles southeast of Slab Fork P. O.; **Beckley Coal**; drift mine; elevation, 1960′ B.: butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	7

Slab Fork Coal Co., Mine No. 7—No. 49 on Map II.

On east side of Burnt Fork of Slab Fork, 1.2 miles west of Slab Fork P. O., **Beckley Coal**; drift mine; elevation, 1965′ B.; butts, N. 40° W.; faces, N. 50° E.; entry driven in about 400 feet.

	Ft.	In.
Coal (with slate roof and floor).....	3	8

The coal in Mines Nos. 6 and 7 is hauled through Mine No. 2 and dumped into railroad cars on Slab Fork.

Slab Fork Coal Co., Mine No. 1—No. 50 on Map II.

On north side of Slab Fork, 0.4 mile east of Slab Fork P. O.; **Beckley Coal**; elevation, 1961′ L.; butts, N. 40° W.; faces, N. 50° E.; mine is now abandoned; section by Krebs.

		Ft.	In.
1.	**Coal, Beckley "Rider"** (with slate roof).....	1	0
2.	Slate	4	6
3.	**Coal**, soft, 0″ to.....0′ 2″		
4.	**Coal**, gas (to slate floor)....5 5	5	7

The analysis of a sample collected by Ray V. Hennen from No. 4 of above section, published in Volume II(A), page 166, (No. 33 in Bulletin 2, page 218) is republished in the first table of analyses under **No. 50.** Sections and analyses (No. 23 in Bulletin 2, page 236) of the coal from this mine are also published in Bulletin 22, pages 289 and 1058, and Bulletin 85, pages 129 and 381, of the U. S. Bureau of Mines, and the latter are republished under **No. 50** in the second table of analyses at the end of this Chapter.

The following analysis of the Beckley Coal from this mine was furnished by Mr. W. G. Caperton, General Manager, Slab Fork, W. Va.:

	Per cent.
Moisture	0.52
Volatile Matter	18.08
Fixed Carbon	78.58
Ash	2.82
Total	100.00
Sulphur	0.51
B. T. U.	15,372

Winding Gulf Colliery Co., Mine No. 1—No. 51 on Map II.

Near the head of Winding Gulf, 0.6 mile southeast of Winding Gulf; **Beckley Coal**; elevation, 2280′ B.; butts, N. 39° W.; faces, N. 51° E.; greatest rise, southeast; Mine No. 1 daily output, 700 tons; men employed, 135; mule and electric haulage; use, for steam and domestic purposes; shipped East; sample collected from Nos. 3, 4 and 6 of section in First West of Main Right, Room 6; H. O. Hall, Mine Foreman, authority for data; Justus Collins, President, Cincinnati, Ohio.

			Ft.	In.
1.	Slate and sandstone			
2.	Slate, draw		0	3
3.	**Coal**	1′ 6 ″		
4.	**Coal**, softer	1 5		
5.	Bone	0 3		
6.	**Coal**, soft (to slate floor)	1 3½	4	5½

The composition of sample (271-T) collected from above mine, as reported by Messrs. Hite and Krak, is published under **No. 51** in the first table of analyses at the end of this Chapter. Sections and analyses of the coal from this mine are also published in Bulletin 85, pages 131 and 384, of the U. S. Bureau of Mines, and the analyses are republished under **No. 51** in the second table of analyses.

Winding Gulf Colliery Co., Mine No. 2—No. 52 on Map II.

On West Fork of Winding Gulf, 0.6 mile northwest of Winding Gulf P. O.; **Beckley Coal**; shaft mine; depth of shaft, 86 feet; elevation of coal, 2180′ B.; butts, N. 50° W.; faces, N. 40° E.; capacity, 400 tons; men employed, 80; coal shipped East to tidewater for steam purposes; Justus Collins, President, Cincinnati, Ohio; section by Krebs.

		Ft.	In.
Coal, gas (with shale roof)	3′ 1″		
Bony coal	0 2		
Coal, gas (to slate floor)	1 6	4	9

The coal from this mine was measured and sampled for analysis by the U. S. Bureau of Mines and the results are published in Bulletin 85, pages 131 and 384, and the analysis is republished under **No. 52** in the second table of analyses at the end of this Chapter.

Lynwinn Coal Company, Mine No. 1—No. 53 on Map II

At Lynwinn, on Winding Gulf; **Beckley Coal**; elevation, 2160′ B.; drift mine; butts, N. 45° W.; faces, N. 45° E.; capacity, 400 tons; men employed, 69; coal shipped East to tidewater for steam purposes; A. S. Goodwin, President, Indianapolis, Ind.; main office, Lynwinn, W. Va.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	3′	1″		
Bony coal	0	5		
Coal, gas (to slate floor)	2	3	5	9

Lynwinn Coal Company, Mine No. 2—No. 54 on Map II.

On east side of Winding Gulf, at Lynwinn; **Beckley Coal**; drift mine; elevation, 2160′ B.; butts, N. 45° W.; faces, N. 45° E.; capacity, 50 tons; men employed, 10; coal dumped over tipple at Mine No. 1; A. S. Goodwin, President, Indianapolis, Ind.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	3′	1″		
Bony coal	0	4		
Coal, gas (to slate floor)	1	8	5	1

The coal from this mine was sampled and measured by the U. S. Bureau of Mines and published in Bulletin 85, pages 130 and 383, and the analysis is republished under **No. 54** in the second table at the end of this Chapter.

Bailey Wood Coal Co., Mine No. 1—No. 55 on Map II.

On the west side of Winding Gulf, at McAlpin; **Beckley Coal**; elevation, 2104′ L.; butts, N. 28° W.; faces, N. 62° E.; greatest rise, southeast; daily output, 500 tons; men employed, 110; used for steam and domestic purposes, and shipped East; C. B. Lee, President, Glen Jean, W. Va.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	1″		
Slate	0	1		
Coal, gas	1	6		
Coal, harder	0	10		

			Ft.	In.
Coal, soft	1′	4″		
Bone	0	3		
Coal, soft (to slate floor)	2	1	6	2

McAlpin Coal Company Mine—No. 56 on Map II.

On south side of Winding Gulf, at McAlpin; **Beckley Coal**; elevation, 2060′ B.; butts, N. 60° W.; faces, N. 30° E.; capacity, 1200 tons; men employed, 220; coal shipped East to tidewater for steam purposes; John Laing, President, Charleston, W. Va.; measurements taken at first panel and sample collected from Nos. 1 and 2 by Krebs.

			Ft.	In.
1. Coal, gas (with slate roof)	3′	6″		
2. Bony coal	0	2		
3. Coal, gas	1	10	5	6

The analysis of above sample (489-K), as reported by Messrs. Hite and Krak, is published under **No. 56** in the table of analyses at the end of this Chapter. The coal from this mine was also sampled and analyzed by the U. S. Bureau of Mines and the results, as published in Bulletin 85, pages 131 and 385, are republished under **No. 56** in the second table of coal analyses.

A section measured at the drift mouth gives the following:

			Ft.	In.
Coal, gas (with slate roof)	3′	6″		
Coal, bony	0	2		
Coal, gas	2	6		
Shale, dark	3	0		
Coal, gas (to slate floor)	4	0	13	2

In the above section, the lower four feet represents the Fire Creek bed according to Ray V. Hennen's correlations.

E. E. White Coal Co., Stotesbury Mine—No. 57 on Map II.

On north side of Winding Gulf, at Stotesbury; **Beckley Coal**; elevation, 1960′ B.; capacity, 1500 tons; men employed, 250; coal shipped to eastern tidewater for steam purposes; E. E. White, General Manager, Glen White, W. Va.; section by Krebs.

Section in Main Entry:			Ft.	In.
Coal, gas (with slate roof)	3′	2″		
Coal, bony	0	1		
Coal, gas (to slate floor)	1	10	5	1

Section in Entry No. 1:			Ft.	In.
Coal, impure (with sandstone roof)	0′	1″		
Slate	0	2		
Coal, gas	3	6		
Coal, bony	0	4		
Coal, gas (to slate floor)	2	2	6	3

Gulf Smokeless Coal Co. Mine—No. 58 on Map II.

On the east side of Winding Gulf at Tams; **Beckley Coal**; elevation, 2040′ B.; butts, N. 30° E.; faces, N. 60° W.; greatest rise, southeast; capacity, 200 tons; men employed, 300; coal shipped East to tidewater for steam purposes; W. P. Tams, General Manager, Tams, W. Va.; section by Teets in 1st Left Air Course, Room 5 of Mine No. 2.

			Ft.	In.
Slate, draw			0	3
Coal	0′	1½″		
Slate, gray	0	1		
Coal, soft	0	4		
Coal	3	4		
Coal, bony (shipped)	0	2		
Coal, gas (to slate floor)	1	8½	5	9

A few prospect openings on this coal will now be given.

Beaver Coal Company Prospect—No. 417 on Map II.

On the head of Mill Branch of Winding Gulf, 0.7 mile west of Tams; **Beckley Coal**; elevation, 2048′ L.; butts, N. 50° W.; faces, N 40° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	11″		
Bone	0	2		
Coal (visible)	1	4	4	5

Beaver Coal Company Prospect—No. 418 on Map II.

On the west side of Berry Branch of Winding Gulf, 0.9 mile southeast of Tams; **Beckley Coal**; elevation, 2045′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	3′	1″		
Bone	0	3		
Coal (to slate floor)	1	3	4	7

Davis and Thompson Prospect—No. 419 on Map II.

On the west side of Riffe Branch of Stonecoal Creek, 1.8 miles southeast of Tams; **Beckley Coal**; elevation, 2065′ B.; butts, N. 27° E.; faces, N. 63° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, weathered, (with slate roof)	0′	9″		
Coal, impure	0	8		
Shale	0	9		
Coal (to slate floor)	3	7	5	9

Davis and Thompson Prospect—No. 420 on Map II.

On the east side of Riffe Branch of Stonecoal Creek, 2.2 miles southeast of Tams; elevation, 2100′ B.; butts, N. 33° E.; faces, N. 57° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, weathered (with slate roof)	0′	9 ″		
Shale, dark	0	3		
Coal	0	2		
Slate, gray	0	1½		
Coal	0	1½		
Shale, gray	0	4		
Coal	0	2½		
Fire clay	1	2		
Coal	4	6½		
Shale	0	10½		
Coal (to slate floor)	1	2	9	8½

Davis and Thompson Prospect—No. 421 on Map II.

On the west side of Riffe Branch of Stonecoal Creek, 2.3 miles nearly south of Tams; **Beckley Coal**; elevation, 2105′ B.; butts, N. 34° E.; faces, N. 56° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, weathered (with shale roof)	0′	8″		
Slate, gray	1	6		

			Ft.	In.
Coal, weathered	4′	4″		
Slate, dark	2	1		
Coal (to slate floor)	1	2	9	9

Western Pocahontas Coal Co. Prospect—No. 422 on Map II.

On the head of the Right Fork of Riffe Branch of Stonecoal Creek, 2.1 miles southeast of Tams; **Beckley Coal**; not fully opened; elevation, 2125′ B.; butts, N. 35° E.; faces, N. 55° W.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale and sandstone roof and slate floor)	2	10

Davis and Thompson Prospect—No. 423 on Map II.

On the east side of Aggy Hollow of Stonecoal Creek, 2.4 miles south of Tams; **Beckley Coal**; elevation, 2035′ B.; butts, N. 54° E.; faces, N. 36° W.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	7″		
Slate	0	4		
Coal	0	1		
Fire clay	0	8		
Coal, weathered	4	3		
Slate, dark	1	1		
Coal	0	11		
Fire clay	0	2		
Coal (to slate floor)	0	8	8	9

Davis and Thompson Prospect—No. 424 on Map II.

On the south side of Stonecoal Creek, 2.0 miles northeast of Stonecoal Junction; **Beckley Coal**; elevation, 2095′ B.; butts, N. 50° W.; faces, N. 40° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, weathered (with shale roof)	0′	7½″		
Slate, gray	0	3		
Coal, weathered	0	2½		
Slate, gray	0	3		
Coal, weathered	4	6		
Slate, gray	0	4		
Coal, good (to slate floor)	0	9	6	11

Piney Coking Coal Co. Prospect—No. 425 on Map II.

On the south side of Farley Branch of Stonecoal Creek, 3.1 miles southeast of Tams; **Beckley Coal**; elevation, 2190′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, weathered (with sandstone roof and slate floor)	3	6

Piney Coking Coal Co. Prospect—No. 426 on Map II.

On the south side of Stonecoal Creek, 3 miles northeast of Stonecoal Junction; **Beckley Coal**; elevation, 2195′ B.; butts, N. 29° W.; faces, N. 51° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, soft, (with sandstone roof and slate floor)	3	11

The analysis of a sample (277-T) collected from above prospect is published under **No. 426** in the table at the end of this Chapter.

Coal Exposure—No. 427 on Map II.

On Slab Fork in Virginian Railroad cut, 1.0 mile southwest of Slab Fork; **Beckley Coal**; elevation, 1795′ B.; section by Teets.

			Ft.	In.
Coal (with shale roof)	1′	6″		
Shale	19	0		
Coal	0	10	21	4

Coal Exposure—No. 428 on Map II.

On Allen Creek, in county road, 1.8 miles southeast of Hotchkiss; **Beckley Coal**; elevation, 2035′ B.; section by Teets.

	Ft.	In.
Shale and sandstone roof		
Coal, weathered (to slate floor)	3	2

Coal Exposure—No. 429 on Map II.

In county road on head of Allen Creek, 1.4 miles southeast of Hotchkiss; **Beckley Coal**; elevation, 2025′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof)	2	3

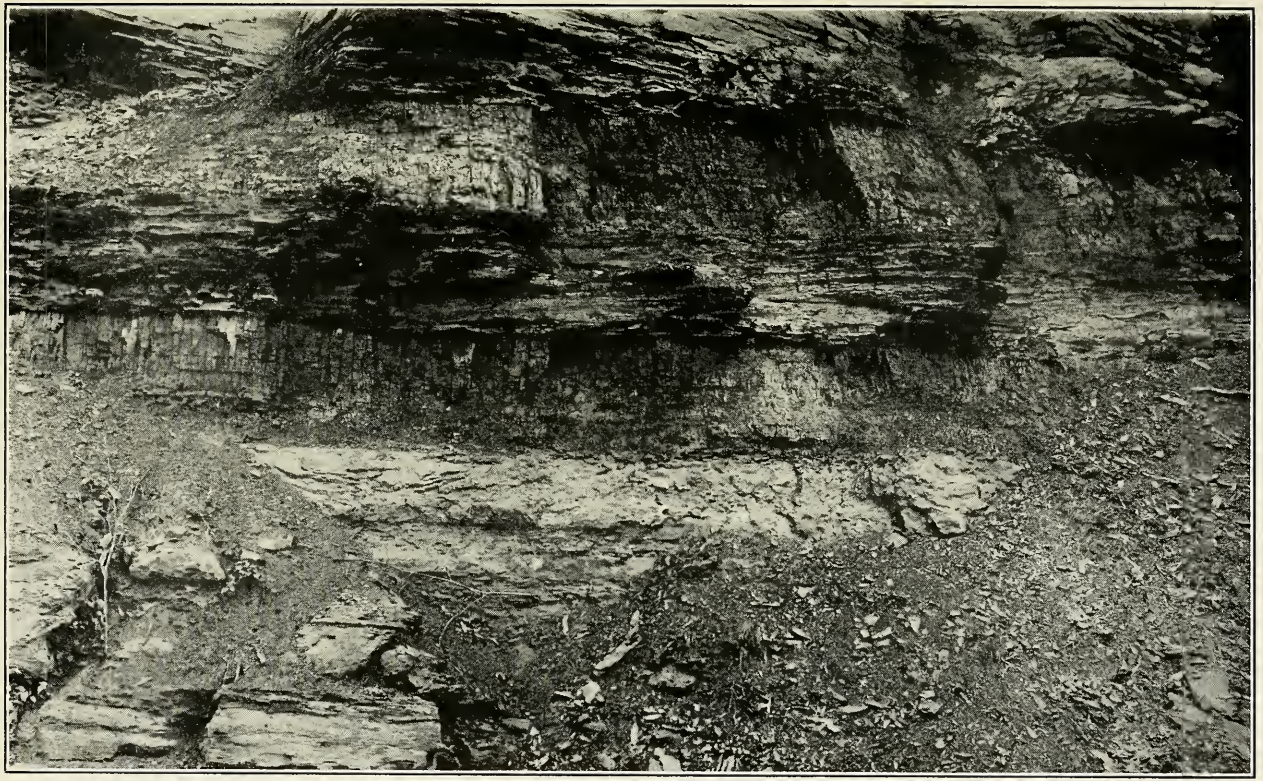

PLATE XXIII.—View showing split in Beckley Coal in Virginian Railway grade ½ mile south of Slab Fork.

Coal Exposure—No. 430 on Map II.

On Burnt Fork of Slab Fork, 1.0 mile west of Slab Fork Station; **Beckley Coal**; elevation, 1825′ B.; butts, N. 30° E.; faces, N. 60° W.; greatest rise, southeast; section by Teets.

	Ft.	In
Coal (with slate roof and floor)	2	7

Slab Fork Coal Co. Opening—No. 431 on Map II.

On Slab Fork, just east of Slab Fork Station, at an old drift (No. 4); **Beckley Coal**; elevation, 1960′ B.; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	2½″		
Slate	0	0½		
Coal	4	2½		
Bone	0	2½		
Coal (to slate floor)	1	3	5	11

The analysis published by the U. S. Bureau of Mines, Bulletin 85, page 129, is republished under **No. 431** in the second table of analyses at the end of this Chapter.

Piney Coking Coal Co. Local Fuel Mine—No. 432 on Map II.

On the head of Laurel Fork of Stonecoal Creek, 2.2 miles southeast of Winding Gulf P. O.; **Beckley Coal**; elevation, 2300′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, weathered (with sandstone roof)	4′	1″		
Bone	0	6		
Coal, soft (to slate floor)	1	8	6	3

Piney Coking Coal Co. Local Fuel Mine—No. 433 on Map II.

On the head of Laurel Fork of Stonecoal Creek, 1.9 miles southeast of Winding Gulf Station; **Beckley Coal**; elevation, 2290′ B.; N. 37° W.; faces, N. 53° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with sandstone roof)	2′	9″		
Slate, gray, bony	0	9		
Coal, gas (to slate floor)	1	11	5	5

Piney Coking Coal Co. Opening—No. 434 on Map II.

On Laurel Fork of Stonecoal Creek, 2 miles south of Winding Gulf Station; **Beckley Coal**; elevation, 2270′ B.; butts, N. 34° W.; faces, N. 56° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	1′	4″		
Bone	0	2		
Coal (to shale floor)	3	9	5	3

Piney Coking Coal Co. Opening—No. 435 on Map II.

On the north side of Tommy Creek, on the west end of the Devils Backbone, 2.2 miles west of Odd; **Beckley Coal**; elevation, 2670′ B.; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	4′	9 ″		
Sandstone	0	0½		
Coal (to slate floor)	0	5½	5	3

A. B. Vines Opening—No. 436 on Map II.

On the north side of the Devils Backbone, on the head of the Left-hand Fork of Tommy Creek, 1.2 miles west of Odd; **Beckley Coal**; elevation, 2820′ B.; butts, N. 28° W.; faces, N. 62° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	2″		
Fire clay	0	2		
Coal (to slate floor)	2	7	3	11

Beaver Coal Company Opening—No. 437 on Map II.

On the south side of Winding Gulf, in Virginian Railway cut, ¾ mile northwest of Lynwinn; **Beckley Coal**; elevation, 2195′ B.; butts, N. 35° W.; faces, N. 55° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	8″		
Coal, softer	1	4		
Bone	0	4		
Coal, soft	1	2		
Shale, gray	0	5		
Coal, gas	0	10		
Slate	0	5		
Coal (to slate floor)	0	7	6	9

Beaver Coal Company Opening—No. 438 on Map II.

On the north side of Winding Gulf, in Virginian Railway cut, just north of Hotcoal; **Beckley Coal**; elevation, 2225′ B.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	6″		
Coal, softer	1	8		
Bone	0	5		
Coal, soft	1	5		
Slate, dark gray	1	2		
Coal, soft	0	4		
Shale, gray	0	6		
Coal (to slate floor)	0	8	7	8

Coal Exposure—No. 439 on Map II.

In Virginian Railway cut just above mouth of Burnt Fork of Slab Fork; **Beckley Coal**; elevation, 1825′ B.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	3′	3″		
Bone	0	2		
Coal	0	3		
Shale, dark	4	0		
Coal (to shale floor)	2	11	10	7

This lowest division would be the Fire Creek Coal according to Ray V. Hennen's correlations.

Beaver Coal Company Exposure—No. 440 on Map II.

Near mouth of Grave Fork of Slab Fork, at Hotchkiss; **Beckley Coal**; elevation, 1725′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal, gas (with shale roof and slate floor)	2	7

In addition to the measurements of the Beckley Coal already given, a few sections are found in the records of the diamond core test holes, published on pages 285 to 291 of this Report.

Shady Spring District, Raleigh County.

The **Beckley Coal** appears high in the hills in Shady Spring District, so that only a small area of the same is underlain with this bed of coal. A few sections of the bed in that area will now be given.

Blue Jay Lumber Company Mine—No. 59 on Map II.

On east side of Beaver Creek, 0.6 mile east of Glen Morgan; **Beckley Coal**; elevation, 2380′ B.; butts, N. 75° W.; faces, N. 15° E.; capacity, 150 tons; men employed, 30; coal shipped East to tidewater for steam purposes; main office, Blue Jay, W. Va.; C. L. Goodman, President, Sunbury, Pa.; section by Krebs.

			Ft.	In.
Coal, gas (with dark slate roof)	1′	4″		
Shale, dark	0	2		
Coal, impure	0	4		
Coal, gas (to slate floor)	3	0	4	10

The coal from the above mine was measured and sampled by the U. S. Bureau of Mines and the results are published in Bulletin 22, pages 289 and 1058, and those from Blue Jay No. 4 in Bulletin 85, pages 128 and 379, and the analyses are republished under **No. 59** in the second table at the end of this Chapter.

On Piney Creek at Sullivan, the Beckley Coal is being mined on a commercial scale by the Sullivan Coal and Coke Company, and Mr. Teets reports the following:

Sullivan Coal Company, North Mine—No. 60 on Map II.

On east side of Piney Creek at Sullivan; **Beckley Coal**; elevation, 2315′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; daily capacity, 400 tons; men employed, 140; shipped East and exported for steam purposes; electric haulage; J. A. Wood, President, Sullivan, W. Va.; section by Teets.

			Ft.	In.
Coal, gas (with sandstone roof)	1′	4½″		
Coal, impure	0	3½		
Coal	1	3		
Slate	0	4		
Coal (to slate floor)	2	4	5	7

The coal from this mine was analyzed by the U. S. Bureau of Mines and the results published in Bulletin 22, pages 291 and 1065, and the analyses are republished under **No. 60** in the second table of analyses at the end of this Chapter.

Sullivan Coal Company, South Mine—No. 61 on Map II.

On Piney Creek just south of Sullivan; **Beckley Coal**; elevation, 2315′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; daily capacity, 200 tons; men employed, 50; exported for steam purposes; J. A. Wood, President, Sullivan, W. Va.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	5″		
Slate	0	3		
Coal	1	3		
Slate, gray	0	3		
Coal (to slate floor)	1	10	5	0

The coal from this mine was analyzed by the U. S. Bureau of Mines and the results published in Bulletin 22, pages 291 and 1065, and the analyses are republished under **No. 61** in the second table at the end of this Chapter. The analysis of a composite sample (No. 21 in Bulletin 2, page 236) from the North and South Mines is also published in this table under **No. 60-61.**

The Beaver Coal Company owns a large area of land in Raleigh County, and a number of years ago, this Company made several openings in the Beckley seam, some of which have since fallen shut. Where the writer was unable to get a measurement of the coal, the section is given as reported by the Company on its property map:

Beaver Coal Co. Prospect—No. 440A on Map II.

On east side of Piney Fork, 0.2 mile south of Whorley; **Beckley Coal**; elevation, 2260′ B.; coal not fully under cover; section by Krebs.

	Ft.	In.
Coal, soft (with slate roof and floor)	4	6

Beaver Coal Co. Prospect—No. 441 on Map II.

On east side of Piney Creek, 0.3 mile south of Whorley; **Beckley Coal**; elevation, 2300′ B.; coal not fully under cover; section by Krebs.

	Ft.	In.
Coal (with slate roof and floor)	3	6

Beaver Coal Co. Prospect—No. 442 on Map II.

On east side of Piney Creek, 0.5 mile south of Whorley; **Beckley Coal**; elevation, 2368′ B.; coal not fully under cover; section by Krebs.

	Ft.	In.
Coal (with slate roof and floor)	5	0

Davis Heirs Opening—No. 443 on Map II.

On west side of Piney Creek, 0.9 mile south of Stanaford; **Beckley Coal**; elevation, 2347′ L.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	3	2

Beaver Coal Co. Opening—No. 444 on Map II.

On east side of Piney Creek, 0.4 mile southeast of Stanaford; **Beckley Coal**; elevation, 2130′ B.; not fully under cover; section by Beaver Coal Co.

	Ft.	In.
Coal (with slate roof and floor)	5	6

Coal Opening—No. 445 on Map II.

On the west side of Glade Creek, just east of Table Rock P. O.; **Beckley Coal**; elevation, 2705′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	2	7

Rolf Coal Company Opening—No. 446 on Map II.

On the north side of Scott Branch of Glade Creek, 0.6 mile east of Crow; **Beckley Coal**; elevation, 2665′ B.; butts, N. 65° W.; faces, N. 25° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale roof and fire clay floor)	1	7

Rolf Coal Company Opening—No. 447 on Map II.

On the head of Scott Branch of Glade Creek, just northeast of Crow; **Beckley Coal**; elevation, 2640′ B.; butts, N. 5° W.; faces, N. 85° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor)	1	9

Coal Opening—No. 448 on Map II.

On the north side of Little Beaver Creek, 1¼ miles west of Crow; **Beckley Coal**; elevation, 2610′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	1	7

Dr. Andrew Lewis Opening—No. 449 on Map II.

On the east side of Sand Branch of Little Beaver Creek, 0.8 mile east of Daniels; **Beckley Coal**; elevation, 2590′ B.; section by Teets; butts, N. 18° W.; faces, N. 72° E.; greatest rise, southeast.

			Ft.	In.
Slate and coal streaks.....				
Coal	1′	10″		
Slate, gray, soft.....	0	1		
Coal (to slate floor).....	2	4	4	3

Daniels Coal Opening—No. 450 on Map II.

On road, 0.4 mile southwest of Daniels, near school house; **Beckley Coal**; elevation, 2475′ B.; butts, N. 20° W.; faces, N. 70° E.; section by Teets.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	0

In passing to the south of Daniels, the Beckley Coal rises rapidly above the bed of the stream, and soon appears near the tops of the hills, being mined for local fuel near Shady Spring P. O., where the following sections were obtained:

C. C. Mooman Mine—No. 451 on Map II.

On Left Fork of Beaver Creek, 1.2 miles southwest of Shady Spring P. O.; **Beckley Coal**; elevation, 2895′ B.; butts, N. 80° W.; faces, N. 10° E.; capacity, 10 tons; coal mined for local fuel; driven under cover about 150 feet; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor).....	3	10

The analysis of a sample (492-K) collected from above mine by Krebs is published under **No. 451** in the first table at the end of this Chapter.

Stanton Griffith Local Fuel Mine—No. 452 on Map II.

On Left Fork of Beaver Creek, 1.4 miles southwest of Shady Spring P. O.; **Beckley Coal**; elevation, 2910′ B.; section by Krebs.

	Ft.	In.
Coal, gas (with dark shale roof and slate floor)..	3	8

Near the southern part of Shady Spring District, the

Beckley Coal is mined south of Joes Ridge, where the following section was measured:

Jos. Green Local Fuel Mine—No. 453 on Map II.

South of Joes Ridge, 0.5 mile north of Mountview; **Beckley Coal**; elevation, 3075′ B.; butts; N. 60° W.; faces, N. 30° E.; section by Krebs

			Ft.	In.
Coal, gas (with dark shale roof)	2′	7″		
Shale, dark	0	9		
Coal, gas (to slate floor)	2	2	5	6

Northeast from Mountview towards Piney Creek, the Beckley Coal dips rapidly. The following section was measured on the head of Beaver Creek:

M. C. Lilly Local Fuel Mine—No. 454 on Map II.

On head of Beaver Creek, 1.9 miles southwest of Phillips School; **Beckley Coal**; elevation, 2640′ B.; section by Krebs.

			Ft.	In.
Coal (with dark shale roof)	1′	10″		
Concealed by water (to slate floor)	0	10	2	8

Price Heirs Prospect—No. 455 on Map II.

On the south side of Bowyer Creek, 0.6 mile southeast of Bowyer School; **Beckley Coal**; elevation, 2620′ B.; not fully under cover; section by Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	2	6

Price Heirs Prospect—No. 456 on Map II.

Near head of Bowyer Creek of Piney Creek, 0.9 mile southeast of Bowyer School; **Beckley Coal**; elevation, 2645′ B.; not fully under cover; section by Krebs.

			Ft.	In.
Coal, impure	0′	7 ″		
Coal, gas	0	11		
Bony coal	0	2½		
Coal, gas	1	3		
Bony coal	0	0½		
Coal (to slate floor)	0	3	3	3

Beaver Coal Company Prospect—No. 457 on Map II.

On east side of Laurel Creek of Piney Creek, 2.0 miles southeast of its mouth; **Beckley Coal**; elevation, 2700′ B.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof).....	0′	7 ″		
Bony coal.....	0	0¾		
Coal, gas.....	1	7		
Coal, impure (to slate floor)....	1	0¼	3	3

Price Heirs Prospect—No. 458 on Map II.

On Laurel Creek of Piney Creek, 2.2 miles from its mouth; **Beckley Coal**; elevation, 2720′ B.; not fully under cover; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof).....	1′	9″		
Coal, impure (to slate floor)...	2	1	3	10

Mr. E. V. d'Invilliers, the eminent Mining Engineer of Philadelphia, has also described the **Beckley Coal** along Winding Gulf, and collected samples for analysis by McCreath. The following, published in Volume II(A), pages 193-5, is from d'Invilliers' manuscript report made several years ago:

"**The Beckley Seam.**—This is a comparatively new member of the Pottsville Series, there being no commercial mines shipping coal from it except the operations of the Piney Colliery Company and the Raleigh Coal and Coke Co., near Beckley.

"This bed has no merchantable value along the New River, and it is still uncertain how far west the seam maintains its integrity after passing beneath water level. It is only exposed to view in the deep canyon of Piney Creek from the vicinity of the Stanaford Branch (where its intermediate position between the Sewell and Fire Creek seams is plainly exhibited) south of Pemberton, closely hugging the stream here and concealed, by reason of its dip, in every western bend of that creek.

"Still it has excellent mining values in its range along the valley and though somewhat irregular in section, owing to the rolls in its Raleigh Sandstone roof—even producing local faults in the Beckley district—yields about 5′ 0″ of coal (see plate of Raleigh County sections) and steadily improves in chemical value southward.

"Passing through the divide on to Winding Gulf, it becomes a great double seam and as such is exposed all the way to the Guyandot and through the great plateau on to Stonecoal at its eastern outcrop. On Allen Creek and Slab Fork it is frequently split in two, and though always yielding good coal, its mining value is diminished.

"From the many partial outcrop exposures a number of samples were taken, necessarily from different benches of the seam, owing to the character of the test pits.

"From these, Table No. 6 has been prepared, displaying the excellent quality and frequently handsome mining section this bed exhibits. East of Stonecoal Creek and toward the head of Piney the Beckley seam only catches in the high knobs.

"These twelve samples of the Beckley seam represent an undeveloped area of about 100 square miles, between the headwaters of Piney Creek and the Slab Fork of Guyandot River."

Table No. 6 (d'Invilliers).

Beckley Seam Analyses: Raleigh County.

Sampled by E. V. d'Invilliers; analyzed by A. S. McCreath.

Map No. d'Invilliers.	Thickness of Seam.	Thickness of Coal Sampled.	Water.	Volatile Matter.	Fixed Carbon.	Sulphur.	Ash.
174 R	4′ 7″	4′ 7″	1.002	18.828	74.495	0.675	5.000
170 R	5 4	4 4	0.444	17.376	74.680	1.580	5.920
141 R	5 2	4 4	3.914*	22.801	68.475	0.440	4.370
134 R	4 1	4 1	1.776	19.584	73.454	0.496	4.690
131 R	5 9	4 11	0.430	18.220	76.956	0.584	3.810
122 R	4 5	4 2	1.174	18.726	75.805	0.495	3.800
119 R	7 1	5 5	1.160	18.580	76.476	0.474	3.310
116 R	11 7	6 5a	1.540	19.060	73.808	0.522	5.070
103 R	6 5	5 5a	0.620	17.930	76.176	0.584	4.590
103 R	3 10	3 8b	0.380	18.050	75.855	1.135	4.580
98 R	6 3	5 10	0.736	18.244	75.046	0.634	5.340
87 W	5 1	4 9	0.956	18.484	72.605	0.995	6.960
Average	6′ 4″	5′ 3″	1.777	18.823	74.486	0.718	4.795

R—Raleigh County Nos.; W—Wyoming County Nos.; *Excessive moisture due to weathered condition of sample; a—Top bench only; b—Bottom bench.

No. 174R.—Located at forks of Piney and Soak Creeks, 4.6 miles S. 10° W. of Beckley, Raleigh County.

No. 170R.—On the divide between the head of Piney and Glade Creeks, 4 miles N. 55° E. of Odd P. O., Raleigh County.

No. 141R.—On the head of Bragg Branch of Tommy Creek, 2.7 miles N. 60° W. of Odd P. O., Raleigh County.

No. 134R.—Near the head of Stonecoal Creek, 4.6 miles N. 60° W. of Odd P. O., Raleigh County.

No. 131R.—On the head of Laurel Fork of Stonecoal Creek, 4.4 miles N. 10° W. of Odd P. O., Raleigh County.

No. 122R.—Near the head of Winding Gulf and 2 miles up same from horseshoe bend on Lefthand Fork, in Raleigh County.

No. 119R.—Near head of Winding Gulf, and 1 mile above horseshoe bend, Raleigh County.

No. 116R.—North side of Winding Gulf, and 1 mile below great bend, Raleigh County.

No. 103R.—On the west hillside of Winding Gulf, 2 miles above mouth of Tommy Creek, Raleigh County.

No. 103R.—On the west hillside of Winding Gulf, 2 miles above mouth of Tommy Creek, Raleigh County.

No. 98R.—On the head of Allen Creek, a branch of Guyandot River, Raleigh County.

No. 87W.—On Slab Fork, 2.2 miles above the mouth of Cedar Creek, 4 miles N. 30° E. of Joe Branch, Wyoming County.

"Through a considerable portion of the northwest corner of this area, between Pemberton, Lester and Jenny Gap, this seam is nowhere exposed, so that its western commercial limits can not be defined in advance of boring: But reports of some few test holes already put down speak of finding this seam in good condition in the Jenny Gap district, and as it should be accessible to shafts of moderate depth there, the importance of such tests is apparent."

Richmond District, Raleigh County.

A small area of Beckley Coal occurs in Richmond District, but from data already published in the general sections, it will be noted that this coal is there thin and of little commercial value.

Mercer County.

From the general sections already furnished, on preceding pages of this Report, it will be noted that the Beckley Coal occurs in different places in the western portion of Mercer County, but it is usually thin and has very little commercial value. However, as this coal bed occurs high on the hills, and the Pocahontas Coals being thick and much nearer the valleys, very little prospecting has been done to test for the Beckley Coal. A few sections from that region will now be given:

Coal Exposure—No. 458A on Map II.

In the county road, on Flattop Mountain, 0.7 mile west of the Billy Mills School; **Beckley Coal**; elevation, 3080′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)...	0	10

Coal Exposure—No. 458B on Map II.

In county road, 0.3 mile southwest of Black; **Beckley Coal**; elevation, 3075′ B.; section by Teets.

	Ft.	In.
Coal, fair (with shale roof and fire clay floor)....	1	1

Coal Exposure—No. 458C on Map II.

In county road, on Flattop Mountain, 2 miles southwest of Black; **Beckley Coal**; elevation, 3038′ L.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	6

Western Pocahontas Coal Co. Opening—No. 458D on Map II.

On Flattop Mountain, 1.2 miles northeast of Clarks Gap; **Beckley Coal**; elevation, 3020′ B.; section by Teets.

			Ft.	In.
Coal (with slate roof).....	1′	0½″		
Slate	0	10½		
Slate, coal streaks.....	0	7½		
Sandstone	0	4		
Coal	2	0		
Slate, gray.....	0	4		
Coal (to slate floor).....	0	4½	5	7

R. L. Bailey Opening—No. 458E on Map II.

On Flattop Mountain, 1 mile north of Clarks Gap; **Beckley Coal**; elevation, 3010′ B.; section by Teets.

			Ft.	In.
Coal, gas (with shale roof)....	1′	9″		
Slate and fire clay.....	1	0		
Coal (to slate floor).....	0	2	2	11

Coal Exposure—No. 458F on Map II.

In county road, 0.7 mile north of Giatto; **Beckley Coal**; elevation, 3010′ B.; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	1	9

Coal Exposure—No. 458G on Map II.

In county road, on Flattop Mountain, 1.0 mile northwest of Clarks Gap; **Beckley Coal**; elevation, 3025′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof).....	0	7

Coal Exposure—No. 458H on Map II.

In county road, on Flattop Mountain, 2 miles southwest of Mannering; **Beckley Coal;** elevation, 2820′ B.; section by Teets.

	Ft.	In.
Coal (with sandy shale roof and slate floor).....	2	7

Frank Mabe Opening—No. 458I on Map II.

On head of branch of Little Fork of Elkhorn Creek, 1.6 miles southwest of Mannering, just east of the Mercer-McDowell County Line; **Beckley Coal;** elevation, 2905′ B.; butts, N. 38° E.; faces, N. 52° W.; section by Teets.

		Ft.	In.
Coal, hard (with shale roof)....0′	7″		
Coal 1	6		
Slate, gray.....0	1		
Coal, soft (to slate floor).....0	8	2	10

Coal Exposure—No. 458J on Map II.

In county road, on Flattop Mountain, 2.8 miles southwest of Mannering; **Beckley Coal;** elevation, 2825′ B.; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	0	6

Summers County.

No Beckley Coal was found in Summers County, owing to the fact that this coal overshoots the tops of the highest hills in that county.

Quantity of Beckley Coal Available.

Based on the evidence of the preceding pages, and with a planimeter determination of the area by Teets, the following estimate is made of the probable amount of Beckley Coal in Raleigh County, neglecting that already mined, as it is insignificant when compared to the total. No estimate will be made of this coal in Mercer County:

Probable Amount of Beckley Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Clear Fork	2.5	5	3,200	348,480,000	13,939,200
Marsh Fork	2.5	10	6,400	696,960,000	27,878,400
Town	4.0	50	32,000	5,575,680,000	223,027,200
Trap Hill	5.0	40	25,600	5,575,680,000	223,027,200
Slab Fork	4.5	65	41,600	8,154,432,000	326,177,280
Shady Spring	3.0	20	12,800	1,672,704,000	66,908,160
Totals	.....	190	121,600	22,023,936,000	880,957,440

THE FIRE CREEK COAL.

The **Fire Creek Coal** has been mined in Raleigh County for a number of years at Royal, on New River, the coal being transported across that stream in buckets suspended on wire cables; but when the Piney Branch of the C. & O. Railway was built, the wire rope transmission was dispensed with, a gravity plane being constructed, and the siding extended up New River on the west side of the same to a point opposite the mine. The Fire Creek Coal has not been prospected in **Clear Fork** and **Marsh Fork Districts,** and as the coal horizon lies from 600 to 900 feet under the surface, no estimate can be made on this coal in these districts until it has been proved by diamond core test holes.

Town District, Raleigh County.

The Fire Creek Coal outcrops along New River and Piney Creek in Town District. Sections of the coal were measured as follows:

Stonewall Coal & Coke Co., Terry Mine—No. 62 on Map II.

On the west side of New River, 0.4 mile south of Terry; **Fire Creek Coal**; elevation, 1940′ B.; butts, N. 33° W.; faces, N. 57° E.; greatest rise, southeast; men employed, 110; daily output, 200 tons; coal shipped East to tidewater for steam purposes; section by Teets

	Ft.	In.
Coal (with slate roof and floor)	4	2

The coal from this mine was sampled and analyzed (No. 6 in Bulletin 2, page 235) by the U. S. Bureau of Mines and the results, as published in Bulletin 22, pages 291 and 1066, are republished under **No. 62** in the second table at the end of this Chapter.

Stonewall Coal & Coke Co.—Abandoned Mine—No. 63 on Map II.

On north side of Piney Creek, at Stonewall; **Fire Creek Coal**; elevation, 2035′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets

	Ft.	In.
Coal, gas (with slate roof and floor).....	2	6

The analysis of a sample collected by Ray V. Hennen and published in Volume II(A), page 166, (No. 28 in Bulletin 2, page 218) of the Survey Reports, is republished under **No. 63** in the first table of analyses at the end of this Chapter. The coal was also sampled (No. 7 in Bulletin 2, page 235) by the U. S. Bureau of Mines and the results, as published in Bulletin 22, pages 291 and 1064, are republished under **No. 63** in the second table at the end of this Chapter.

Coal Prospect—No. 459 on Map II.

On the west side of New River, just northeast of Terry; **Fire Creek Coal**; elevation, 1930′ B.; butts, N. 33° W.; faces, N. 57° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	4	1

The analysis of a sample (456-T) collected from above mine, as reported by Messrs. Hite and Krak, is published under **No. 459** in the first table of analyses at the end of this Chapter.

Stonewall Coal & Coke Co. Exposure—No. 460 on Map II.

On the west side of New River, one mile north of Terry; **Fire Creek Coal**; elevation, 1940′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	2	2

In passing up Piney Creek from Stonewall, the Fire Creek

Coal appears to thin and as far as prospected, is of no commercial value.

On Winding Gulf, the following section was obtained by Teets:

Coal Exposure—No. 461 on Map II.

On the east side of Winding Gulf, just above Hotcoal; **Fire Creek Coal**; elevation, 2145′ B.; butts, N. 37° W.; faces, N. 53° E.

	Ft.	In.
Coal (with slate roof and floor).....	2	1

In addition to the sections given, the Fire Creek Coal was encountered in the following diamond core test holes in Town District, the records of which are already published on preceding pages of this volume, as follows: Nos. 19, 20, 45, 49, 57, 58, 59, 60, 61, 63, 67, 70, 71, 72, 73, 74, and 83.

Trap Hill District, Raleigh County.

The Fire Creek Coal does not outcrop in Trap Hill District, nor is it mined therein, so that the only information is the data gathered from the diamond core test holes drilled to this bed and published on preceding pages of this Report, as follows: Nos. 87, 88, 89, 91, 124, 128, 129, 130, 132, and 133. These records show that there is a considerable area in Trap Hill District that is underlain with the Fire Creek Coal of sufficient thickness and purity to constitute it a valuable coal.

Slab Fork District, Raleigh County.

In Slab Fork District the Fire Creek Coal outcrops along the waters of Slab Fork, Winding Gulf, Devils Fork, Stonecoal and Tommy Creeks. The interval between this coal bed and the Beckley often thins so that the two form one bed, according to the correlations of Ray V. Hennen, whose conclusions on this subject are provisionally accepted and adopted by the writer, as shown in sections on preceding pages of this Report.

Very little prospect work has been done for this bed in Slab Fork District, as the Beckley bed is thicker and purer and

therefore naturally is the one first sought. A few sections will now be given:

Coal Prospect—No. 461A on Map II.

On the head of the Lefthand Fork of Tommy Creek, 1.0 mile west of Odd; **Fire Creek Coal**; elevation, 2675′ B.; butts, N. 54° E.; faces, N. 36° W.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor).....	1	11

Coal Prospect—No. 461B on Map II.

On the north side of Tommy Creek, 1.0 mile west of Odd; **Fire Creek Coal**; elevation, 2670′; butts, N. 54° E.; faces, N. 36° W.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	1	9

Coal Prospect—No. 461C on Map II.

In county road, on Flattop Mountain, at school house at head of Miller Hollow of Mash Fork or Camp Creek; **Fire Creek Coal**; elevation, 3050′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	8

Coal Exposure—No. 461D on Map II.

In county road, on Flattop Mountain, at head of Bluff Fork of Devils Fork; **Fire Creek Coal**; elevation, 3085′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	8

Shady Spring District, Raleigh County.

The Fire Creek Coal is one of the most important coal beds in Shady Spring District. It is mined on a commercial scale at three mines.

Royal Coal & Coke Co., Royal Mine—No. 64 on Map II.

On the south side of New River, just south of Royal; **Fire Creek Coal**; elevation, 2020′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, southeast; men employed, 50; daily output, 150 tons; used for domestic and steam purposes and shipped East and West; E. E. Huddleston, General Manager, authority for data; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	3	2

The analysis of a sample of coal from this mine, as given in Volume II(A), page 182, (No. 16 in Bulletin 2, page 233) is republished under **No. 64** in the first table of coal analyses at the end of this Chapter.

About one mile up Piney Creek, the Fire Creek Coal is mined by the Wright Coal & Coke Company at Mines Nos. 1 and 2, on the east side of the creek.

Wright Coal & Coke Co., Mine No. 2—No. 65 on Map II.

On the east side of Piney Creek, just below Wright Station; **Fire Creek Coal**; elevation, 2000′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; capacity, 150 tons; men employed, 60; Frank P. Christian, President, Lynchburg, Va.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	4	0

Wright Coal & Coke Co., Mine No. 1—No. 66 on Map II.

On the east side of Piney Creek, just above Wright; **Fire Creek Coal**; elevation, 2020′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; men employed, 65; daily output, about 200 tons; used for domestic and steam purposes, and shipped East and West; Frank P. Christian, President, Lynchburg, Va.; section by Teets.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	11

The analysis of sample of coal from this mine, as given in Volume II(A), page 182, (No. 17 in Bulletin 2, page 233) of Survey Reports, is republished under **No. 66** in the first table of analyses at the end of this Chapter.

Glade Creek Land Co. Prospect—No. 462 on Map II.

On the head of Left Fork of Mill Creek, 1.8 miles southeast of Grandview; **Fire Creek Coal**; elevation, 2600′ B.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)....	0′	9″		
Slate	3	10		
Coal (to slate floor).....	1	9	6	4

A number of prospect openings have been made on the property of the Glade Creek Land Company, between Mill and

Glade Creeks of New River, in the Fire Creek bed, sections of which are as follows:

Glade Creek Land Co. Prospect—No. 463 on Map II.

On east side of Mill Creek, 2.5 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2310′ B.; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor).....	3	7

Glade Creek Land Co. Prospect—No. 464 on Map II.

On east side of Mill Creek, 2.3 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2260′ B.; not fully under cover; butts, N. 38° W.; faces, N. 52° E.; section by G. R. Krebs.

		Ft.	In.
Coal, gas (with slate roof)....0′	6″		
Coal and slate, interlaminated..0	3		
Coal, gas.....0	11½		
Coal, impure.....0	0½		
Coal, gas (to fire clay floor)...1	5	3	2

Glade Creek Land Co. Prospect—No. 465 on Map II.

On east side of Mill Creek, 2.2 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2210′ B.; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with clay roof and fire clay floor)....	3	1

Glade Creek Land Co. Prospect—No. 466 on Map II.

On south side of New River, 2.0 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2220′ B.; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)...	3	5

Glade Creek Land Co. Prospect—No. 467 on Map II.

On east side of Mill Creek, 2.1 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2200′ B.; butts, N. 40° W.; faces, N. 50° E.; not fully under cover; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)...	2	10

Glade Creek Land Co. Prospect—No. 468 on Map II.

On east side of Mill Creek, 2.3 miles southwest of Glade Station; Fire Creek Coal; elevation, 2285′ B.; not fully under cover; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	4	0

Glade Creek Land Co. Prospect—No. 468A on Map II.

On east side of Mill Creek, 2.3 miles southwest of Glade Station; Fire Creek Coal; elevation, 2285′ B.; butts, N. 30° W.; faces, N. 60° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	4	0

Glade Creek Land Co. Prospect—No. 469 on Map II.

On south side of New River, 1.9 miles southwest of Glade Station; Fire Creek Coal; elevation, 2280′ B.; not fully under cover; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and floor)	3	8

Glade Creek Land Co. Prospect—No. 470 on Map II.

On south side of New River, 1.8 miles southwest of Glade Station; Fire Creek Coal; elevation, 2320′ B.; butts, N. 42° W.; faces, N. 48° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	3	11

Glade Creek Land Co. Prospect—No. 471 on Map II.

On south side of New River, 1.7 miles southwest from Glade Station; Fire Creek Coal; elevation, 2310′ B.; driven in about 60 feet; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	4	2

The analysis of a sample collected by J. B. Dilworth for F. V. d'Invilliers (No. 248) as reported by A. S. McCreath, of Harrisburg, Pa., is as follows:

	Per cent.
Moisture	0.473
Volatile Matter	19.608
Fixed Carbon	76.267
Ash	3.652
	100.000
Sulphur	0.658

Glade Creek Land Co. Prospect—No. 472 on Map II.

On south side of New River, 1.6 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2365′ B.; butts, N. 50° W.; faces, N. 40° E.; section by G. R. Krebs.

			Ft.	In.
Coal, gas (with slate roof)	3′	2 ″		
Shale	0	0½		
Coal, gas (with slate floor)	0	7	3	9½

Glade Creek Land Co. Prospect—No. 473 on Map II.

On south side of New River, just west of the Glade Creek road, 1.5 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2490′ B.; not fully under cover; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	3	0

Glade Creek Land Co. Prospect—No. 474 on Map II.

In county road, on west side of Glade Creek, 1.5 miles southwest of Glade P. O.; **Fire Creek Coal**; elevation, 2520′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	3	9

Glade Creek Land Co. Prospect—No. 475 on Map II.

On west side of Glade Creek, 1.5 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2580′ B.; butts, N. 42° W.; faces, N. 48° E.; section by Teets.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	3	3

This opening was sampled by J. B. Dilworth for E. V. d'Invilliers (No. 251) and the analysis as made by A. S. McCreath, of Harrisburg, Pa., is as follows:

	Per cent.
Moisture	0.498
Volatile Matter	19.493
Fixed Carbon	72.184
Ash	7.825
	100.00
Sulphur	0.741

Glade Creek Land Co. Prospect—No. 476 on Map II.

On the west side of Glade Creek, 1.8 miles southwest of Glade Creek Station; **Fire Creek Coal**; elevation, 2600′ B.; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, weathered (with slate roof and floor).....	3	8

Glade Creek Land Co. Prospect—No. 477 on Map II.

On the west side of Glade Creek, ½ mile northeast of Bryan School, 2.4 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2550′ B.; butts, N. 55° W.; faces, N. 35° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, weathered (with slate roof and floor).....	3	8

Glade Creek Land Co. Prospect—No. 478 on Map II.

On the west side of Glade Creek, 2.8 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2515′ B.; butts, N. 45° W.; faces, N. 45° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	**Coal** (with slate roof).....	0′ 4″		
2.	Bone	0 2		
3.	**Coal**	0 2		
4.	Bone	0 4		
5.	**Coal** (to slate floor).....	3 4	4	4

A sample from Nos. 1, 3 and 5 of the above opening was collected by J. B. Dilworth for E. V. d'Invilliers, and the analysis of same by A. S. McCreath, of Harrisburg, Pa., reads as follows:

	Per cent.
Moisture	0.952
Volatile Matter.....	19.635
Fixed Carbon.....	74.683
Ash	4.730
	100.000
Sulphur	0.522

Glade Creek Land Co. Prospect—No. 479 on Map II.

On west side of Glade Creek, 2.3 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2550′ B.; section by Krebs; butts, N. 40° W.; faces, N. 50° E.

			Ft.	In.
Coal, gas (with slate roof)	0′	7 ″		
Slate	0	1½		
Coal	0	6		
Slate	0	1½		
Coal	0	3		
Slate	0	2		
Coal	1	6		
Coal, impure (with fire clay floor)	0	4	3	7

The above section shows that the bed has deteriorated very much at this particular point.

Across the divide to the west, near the head of Fat Creek, the following section was obtained:

Beaver Coal Company Prospect—No. 480 on Map II.

On head of Fat Creek, 0.6 mile west of Table Rock P. O.; butts, N. 50° W.; faces, N. 40° E.; section by Teets.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	1	3

Coal Exposure—No. 481 on Map II.

In the county road on Little Beaver Creek, 1.9 miles southeast of Glen Morgan; **Fire Creek Coal**, elevation, 2245′ B.; section by Teets

	Ft.	In.
Coal (with sandstone roof and slate floor)	1	7

Coal Exposure—No. 482 on Map II.

In the county road, on north side of Little Beaver Creek, about 2.2 miles west of Glen Morgan; elevation, 2250′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	0	7

Coal Exposure—No. 483 on Map II.

In the county road, ¾ mile west of Crow, on the north side of Little Beaver Creek; **Fire Creek Coal**; elevation, 2375′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor)	0	10

Coal Exposure—No. 484 on Map II.

In the county road, 0.2 mile southeast of Daniels, just south of school house; **Fire Creek Coal**; elevation, 2325′ B., section by Teets.

			Ft.	In.
Coal (with slate roof, streaked with coal)	1′	10″		
Slate, gray	0	1		
Coal (to slate floor)	1	2	3	1

Coal Exposure—No. 485 on Map II.

In county road, one mile east of Daniels; **Fire Creek Coal**; elevation, 2360′ B.; butts, N. 20° W.; faces, N. 70° E.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	3	0

Coal Exposure—No. 486 on Map II.

In county road, on the west side of Glade Creek, 2.0 miles northeast of Shady Spring; **Fire Creek Coal**; elevation, 2690′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	2	6

Wm. Plumley Opening—No. 487 on Map II.

On the east side of Little Beaver Creek, one mile southeast of Crow; **Fire Creek Coal**; elevation, 2690′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor)	2	2

Coal Exposure—No. 488 on Map II.

In C. & O. Ry. cut on the north side of Piney Creek, 0.4 mile west of Fitzpatrick; **Fire Creek Coal**; elevation, 2218′ L.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	0′	5 ″		
Slate, gray	0	5½		
Coal	0	9		
Slate, gray	0	1		
Coal (to slate floor)	0	8½	2	5

In passing up Piney Creek from Fitzpatrick, the Fire Creek Coal dips under water level and remains under same until about 1.5 miles south of Woodpeck, where the coal comes

PLATE XXIV(a).—Flattop Mountain near Egeria.

PLATE XXIV(b).—View of Flattop Mountain near Bluff Mountain.

out of this creek and rises to the south a little faster than the bed of the stream. A number of openings have been made along Piney Creek from the mouth of Bowyer Creek south, as follows:

New River Company Prospect—No. 489 on Map II.

On north side of Bowyer Creek, 0.6 mile east of its mouth; Fire Creek Coal; elevation, 2430′ L.; butts, N. 30° W.; faces, N. 60° E.; driven in 20 feet; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	1′	5″		
Slate	0	4		
Coal, gas (to fire clay floor)	2	8	4	5

New River Company Prospect—No. 490 on Map II.

On north side of Bowyer Creek, 0.8 mile east of its mouth; Fire Creek Coal; elevation, 2478′ L.; butts, N. 35° W.; faces, N. 55° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	0 ″		
Shale	1	1½		
Coal (to fire clay floor)	2	8½	5	10

Nos. 1 and 3 of the above section were sampled by E. M. Merrill, Mining Engineer, Beckley, W. Va., and the analysis of same by Messrs. Crowell and Murray, Cleveland, Ohio. reads as follows:

	Per cent.
Moisture	1.10
Volatile Matter	16.00
Fixed Carbon	80.05
Ash	2.85
	100.00
Sulphur	0.87
B. T. U.	15,262

New River Company Prospect—No. 491 on Map II.

On north side of Bowyer Creek, 1.4 miles from its mouth; Fire Creek Coal; elevation, 2535′ L.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	1′	11 ″		
Shale	2	0½		
Coal	2	8	6	7½

It will be noted that in passing up Bowyer Creek to the east, the shale parting which separates the bed into two benches becomes considerably thicker:

New River Company Prospect—No. 492 on Map II.

On south side of Bowyer Creek, 1.1 miles from its mouth; **Fire Creek Coal**; elevation, 2468′ L.; butts, N. 38° W.; faces, N. 52° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	3″		
Shale	1	7		
Coal, gas (to fire clay floor)	2	9	6	7

New River Company Prospect—No. 493 on Map II.

On the south side of Bowyer Creek, 0.7 mile from its mouth; **Fire Creek Coal**; elevation, 2416′ L.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	0″		
Shale	0	8		
Coal, gas (to fire clay floor)	2	6	5	2

It will be noted that the slate parting has thinned again near Piney Creek.

The **Fire Creek Coal** is mined for local fuel by J. J. Tolley near the mouth of Laurel Creek where the following data were obtained:

J. J. Tolley Local Fuel Mine—No. 494 on Map II.

On north side of Laurel Creek of Piney Creek, ¼ mile from its mouth; **Fire Creek Coal**; elevation, 2303′ L.; butts, N. 40° W.; faces, N. 50° E.; driven in 80 feet; section by Krebs.

				Ft.	In.
1.	**Coal**, gas (with slate roof)	2′	2″		
2.	Shale	0	8		
3.	**Coal**, gas (to fire clay floor)	2	5	5	3

The analysis of a sample (492-K) collected from Nos. 1 and 3 of above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 494.**

Beaver Coal Company Prospect—No. 495 on Map II.

On north side of Laurel Creek of Piney Creek, 0.6 mile east of its mouth; **Fire Creek Coal**; elevation, 2359′ L.; butts, N. 40° W.; faces, N. 50° E.; not fully driven under cover; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	3″		
Slate	0	11		
Coal, gas (to fire clay floor)	2	7	5	9

Beaver Coal Company Prospect—No. 496 on Map II.

On north side of Laurel Creek of Piney Creek, ¾ mile east of mouth; **Fire Creek Coal**; butts, N. 45° W.; faces, N. 45° E., elevation, 2406′ L.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	2″		
Shale	1	3		
Coal (to fire clay floor)	2	8	6	1

Beaver Coal Company Prospect—No. 497 on Map II.

On south side of Laurel Creek of Piney Creek 1.4 miles southeast from its mouth; **Fire Creek Coal**; elevation, 2558′ L.; section by Krebs.

			Ft.	In.
Coal (with shale roof)	1′	3½″		
Shale	1	9		
Coal (to fire clay floor)	2	1	5	1½

Beaver Coal Company Prospect—No. 498 on Map II.

On south side of Laurel Creek of Piney Creek, 0.9 mile southeast of its mouth; **Fire Creek Coal**; elevation, 2519′ L.; butts, N. 38° W.; faces, N. 52° E.; not fully under cover; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	1′	9½″		
Slate	0	5		
Coal, gas (to shale floor)	2	4½	4	7

Beaver Coal Company Prospect—No. 499 on Map II.

On south side of Laurel Creek of Piney Creek, ¾ mile southeast of its mouth; **Fire Creek Coal**; elevation, 2448′ L.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	3″		
Shale	0	5½		
Coal, gas (to fire clay floor)	2	8	5	4½

Beaver Coal Company Prospect—No. 500 on Map II.

On the south side of Laurel Creek of Piney Creek, 0.3 mile southeast from its mouth; **Fire Creek Coal**; elevation, 2300′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2′	7″		
Slate	1	1		
Coal, gas (to fire clay floor)	2	8	6	4

In passing up Piney Creek to the south to Lambkin Branch, the following sections were obtained:

Beaver Coal Company Prospect—No. 501 on Map II.

On the north side of Lambkin Branch of Piney Creek, 0.4 mile east from its mouth; **Fire Creek Coal**; elevation, 2450′ L.; not fully under cover; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	7″		
Shale	0	7		
Coal, gas (to fire clay floor)	2	8	5	10

Beaver Coal Company Prospect—No. 502 on Map II.

On north side of Lambkin Branch of Piney Creek, 0.6 mile east of its mouth; **Fire Creek Coal**; elevation, 2501′ L.; butts, N. 38° W.; faces, N. 52° E.; section by Krebs.

			Ft.	In.
Coal (with slate roof)	2′	2″		
Shale	0	6		
Coal, gas (to fire clay floor)	2	11	5	7

Piney Coking Coal Co. Prospect—No. 503 on Map II.

On north side of Lambkin Branch of Piney Creek, 1.1 miles southeast from its mouth; **Fire Creek Coal**; butts, N. 50° W.; faces, N. 40° E.

			Ft.	In.
Coal, gas (with shale roof)	2′	0″		
Shale	1	1		
Coal, gas (to fire clay floor)	1	9	4	10

Piney Coking Coal Co. Prospect—No. 504 on Map II.

On head of Lambkin Branch of Piney Creek, where the coal dips under same, 1.3 miles southeast from its mouth; **Fire Creek Coal**; elevation, 2528′ L.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	2′	3″		
Slate	1	5		
Coal (to fire clay floor)	2	0	5	8

It will be noted that the shale parting thickens in passing to the southeast from Piney Creek.

Piney Coking Coal Co. Prospect—No. 505 on Map II.

On south side of Lambkin Branch, 1.0 mile southeast from its mouth; **Fire Creek Coal**; elevation, 2500′ L.; butts, N. 38° W.; faces, N. 52° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′	2½″		
Slate	0	8		
Coal, gas (to fire clay floor)	2	1	4	11½

Piney Coking Coal Co. Prospect—No. 506 on Map II.

On the south side of Lambkin Branch of Piney Creek, 0.4 mile southeast of its mouth; **Fire Creek Coal**; elevation, 2377′ L.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	1′	9″		
Shale	0	3		
Coal, gas (to fire clay floor)	2	10	4	10

Piney Coking Coal Co. Prospect—No. 507 on Map II.

On the east side of Piney Creek, 0.5 mile south of mouth of Lambkin Branch; **Fire Creek Coal**; elevation, 2406′ L.; section by Krebs.

			Ft.	In.
1.	**Coal**, gas (with slate roof)	2′ 0″		
2.	Slate	0 6		
3.	**Coal**, gas (to fire clay floor)	2 9	5	3

A sample was collected from Nos. 1 and 3 by E. M. Merrill, Mining Engineer, Beckley, W. Va., and the analysis of same by Messrs. Crowell and Murray, Cleveland, Ohio, reads as follows:

	Per cent.
Moisture	0.86
Volatile Matter	16.46
Fixed Carbon	78.91
Ash	3.77
	100.00
Sulphur	0.59
B. T. U.	15,100

Beaver Coal Company Prospect—No. 508 on Map II.

On east side of Piney Creek, 0.7 mile south of mouth of Lambkin Branch; **Fire Creek Coal**; elevation, 2418′ L.; not fully under cover; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	2′ 1 ″			
Shale	0 6½			
Coal, gas (to fire clay floor)	2 2		4	9½

Piney Coking Coal Co. Prospect—No. 509 on Map II.

On west side of Piney Creek, 1.6 miles south of mouth of Lambkin Branch; **Fire Creek Coal**; elevation, 2434′ L.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with shale roof)	1′ 8″			
Shale	0 7			
Coal, gas (to fire clay floor)	1 7		3	10

Piney Coking Coal Co. Prospect—No. 510 on Map II.

On east side of Piney Creek, 1.9 miles south of mouth of Lambkin Branch; **Fire Creek Coal**; elevation, 2474′ L.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

		Ft.	In.
Coal (with shale roof)	1′ 11″		
Shale	0 7		
Coal, gas (to fire clay floor)	1 10	4	4

Richmond District, Raleigh County.

A number of prospect openings have been made in the **Fire Creek Coal** in Richmond District to test its thickness and purity, a few sections of which will now be given:

Glade Creek Coal Land Co. Prospect—No. 511 on Map II.

On south side of New River, 2.0 miles southeast of Glade Station; **Fire Creek Coal**; elevation, 2600′ B.; section by G. R. Krebs; butts, N. 40° W.; faces, N. 50° E.; not fully under cover.

		Ft.	In.
Coal, impure (with shale roof)	0′ 6″		
Coal, gas (to slate floor)	4 11	5	5

Another opening located a short distance to the southwest of No. 511 gives the following section:

Glade Creek Land Co. Prospect—No. 512 on Map II.

On south side of New River, 1.9 miles southeast of Glade Station; **Fire Creek Coal**; elevation, 2600′ B.; butts, N. 40° W.; faces, N. 50° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	5	3

Glade Creek Land Co. Prospect—No. 513 on Map II.

On south side of New River, 1.8 miles southeast of Glade Station; **Fire Creek Coal**; elevation, 2600′ B.; not fully under cover; section by G. R. Krebs.

	Ft.	In.
Coal (with shale roof and fire clay floor)	5	0

Jas. H. Huling Prospect—No. 514 on Map II.

On south side of New River, 0.9 mile southeast of Glade Station; **Fire Creek Coal**; elevation, 2550′ B.; butts, N. 35° W.; faces, N. 55° E.; section by G. R. Krebs.

			Ft.	In.
1.	**Coal**, bony (with slate roof)	0′ 6″		
2.	**Coal**, impure	1 0		
3.	**Coal**, gas (to fire clay floor)	4 5	5	11

A sample collected from No. 3 by J. B. Dilworth for E. V. d'Invilliers and analyzed by A. S. McCreath, of Harrisburg, Pa., as published in Volume II(A), page 183, of the Survey Reports, reads as follows:

	Per cent.
Moisture	1.364
Volatile Matter	19.713
Fixed Carbon	71.603
Ash	7.320
	100.000
Sulphur	0.492

Glade Creek Land Co. Prospect—No. 515 on Map II.

On east side of Glade Creek, on Bills Branch, 0.9 mile from its mouth, and 1.7 miles south of Glade Station; **Fire Creek Coal**; elevation, 2580′ B:; butts, N. 35° W.; faces, N. 55° E.; section by G. R. Krebs.

	Ft.	In.
Coal, gas (with slate roof and fire clay floor)	2	10

Glade Creek Land Co. Prospect—No. 516 on Map II.

On the east side of Glade Creek, between Polls and Second Branches of Glade Creek, 2.7 miles south of Glade Station; **Fire Creek Coal**; elevation, 2640′ B.; section by Teets.

			Ft.	In.
	Coal (with slate roof)	1′ 5 ″		
	Slate, gray	0 1½		
	Coal, impure	0 9		
	Slate, dark	0 11		
	Coal, impure (to slate floor)	0 8	3	10½

Glade Creek Land Co. Prospect—No. 517 on Map II.

On east side of Glade Creek, 1.8 miles south of Glade Station; **Fire Creek Coal**; elevation, 2630′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	1′	0 ″		
Slate	0	1½		
Coal, gas	0	8		
Slate	3	0		
Coal, gas (to fire clay floor)	0	8	5	5½

Glade Creek Land Co. Prospect—No. 518 on Map II.

On south side of Second Branch of Glade Creek, 2.5 miles southeast of Glade Station; **Fire Creek Coal**; elevation, 2685′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

			Ft.	In.
Coal, gas (with slate roof)	1′	0″		
Slate	1	6		
Coal, gas	1	6		
Slate	1	6		
Coal (to fire clay floor)	0	8	6	2

Glade Creek Land Co. Prospect—No. 519 on Map II.

On east side of Glade Creek, 2.4 miles southwest of Glade Station; **Fire Creek Coal**; elevation, 2650′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, gas (with slate roof)	1′	4 ″		
Slate	0	0½		
Coal, gas	0	2½		
Slate	0	1½		
Coal	0	8		
Shale	0	3		
Coal, gas (to fire clay floor)	0	9½	3	5

Rock District, Mercer County.

The Fire Creek Coal horizon in Mercer County is shown in sections published on pages 173, 174, 176, 179, and 181, for Giatto, 1 Mi. W. of Goodwill, Widemouth P. O., 1.5 Mi. N. of Coaldale, and 1 Mi. N. W. of Goodwill. It is observed that the coal is thin and of little commercial value, so far as the prospects show. A few sections will now be given:

Coal Exposure—No. 520 on Map II.

In county road on Flattop Mountain, 0.7 mile southwest of Billy Mills School; Fire Creek Coal; elevation, 3115′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate and fire clay floor)	0	10

Coal Exposure—No. 521 on Map II.

In county road on Flattop Mountain, 0.5 mile south of Black; Fire Creek Coal; elevation, 3040′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with shale roof and slate floor)	1	1

Coal Exposure—No. 522 on Map II.

In county road on Flattop Mountain, just east of Pilot Knob; Fire Creek Coal; elevation, 3010′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	0	8

Coal Exposure—No. 523 on Map II.

In county road on Flattop Mountain, 1.5 miles northeast of Clarks Gap; Fire Creek Coal; elevation, 2945′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	1

Coal Exposure—No. 524 on Map II.

In county road, 0.3 mile north of Clarks Gap; Fire Creek Coal; elevation, 2960′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	2

Coal Exposure—No. 525 on Map II.

In county road, on Fork Ridge, 1.3 miles northwest of Giatto; Fire Creek Coal; elevation, 3035′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	0

Coal Exposure—No. 526 on Map II.

In county road on Flattop Mountain, 0.7 mile southeast of Clarks Gap; Fire Creek Coal; elevation, 2990′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	1

Coal Exposure—No. 527 on Map II.

In county road, 0.7 mile south of Giatto; **Fire Creek Coal**; elevation, 3020′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	10

Coal Exposure—No. 528 on Map II.

In county road, 2 miles southwest of Mannering; **Fire Creek Coal**; elevation, 2870′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	4

Coal Exposure—No. 529 on Map II.

In county road on Flattop Mountain, 0.6 mile southwest of Black; **Fire Creek Coal**; elevation, 2970′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	0

Coal Exposure—No. 530 on Map II.

In county road, 0.5 mile southwest of Clarks Gap; **Fire Creek Coal**; elevation, 2940′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	10

Coal Exposure—No. 531 on Map II.

In county road, 1.4 miles west of Giatto; **Fire Creek Coal**; elevation, 2890′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	1

Coal Exposure—No. 532 on Map II.

In county road, 0.9 mile south of Giatto; **Fire Creek Coal**; elevation, 2990′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	4

Coal Exposure—No. 533 on Map II.

In county road, 0.6 mile north of Coaldale; **Fire Creek Coal**; elevation, 2815′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	0	6

Coal Exposure—No. 534 on Map II.

In county road, on Flattop Mountain, 2.0 miles southwest of Mannering; **Fire Creek Coal**; elevation, 2825′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and fire clay floor) ..	0	8

Quantity of Fire Creek Coal Available.

Based on the evidence of the preceding pages, and a planimetric determination from Map II by Teets, an estimate is made of the probable amount of the Fire Creek Coal. No estimate will be made of the Fire Creek Coal in Mercer County.

Probable Amount of Fire Creek Coal.

Raleigh County by Districts.	Thickness of Coal Assumed. Ft. In.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Town	2 2	35	22,400	2,439,360,000	97,574,400
Trap Hill	2 6	25	16,000	1,742,400,000	69,696,000
Slab Fork	1 6	20	12,800	836,352,000	33,454,080
Shady Spring	3 0	25	16,000	2,090,880,000	83,635,200
Richmond	3 0	15	9,600	1,254,528,000	50,181,120
Totals	.....	120	76,800	8,363,520,000	334,540,800

THE LITTLE FIRE CREEK COAL.

The geological horizon and thickness of the Little Fire Creek Coal are given in the sections on previous pages of this Report. The coal is usually thin and multiple-bedded. A few sections will be given in addition to those already published:

Slab Fork District, Raleigh County.

Coal Exposure—No. 535 on Map II.

On the east side of Winding Gulf, 0.5 mile east of Hotcoal, in a Virginian Railway cut; **Little Fire Creek Coal**; elevation, 2120′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	0	10

Coal Exposure—No. 536 on Map II.

On the south side of Winding Gulf, at Hotcoal; **Little Fire Creek Coal**; elevation, 2035′ B.; section by Teets.

	Ft.	In.
Coal (with shale and sandstone roof and slate floor)	0	10

Town District, Raleigh County.

Coal Exposure—No. 537 on Map II.

On the west side of Winding Gulf, 0.2 mile north of Stotesbury; **Little Fire Creek Coal**; elevation, 1910′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor)	0	11

J. G. Shrewsbury Opening—No. 538 on Map II.

On the north side of Bluff Fork, 0.8 mile northwest of the Long Wanted School; **Little Fire Creek Coal**; elevation, 2775′ B.; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal (with sandstone roof)	0′ 5″		
Slate	0 1½		
Coal (to slate floor)	1 3	1	9½

Rock District, Mercer County.

The Little Fire Creek Coal is thin and impure in Mercer County, and the sections measured were found along crop exposures.

Coal Exposure—No. 539 on Map II.

In the county road on Flattop Mountain, ⅓ mile southwest of Black; **Little Fire Creek Coal**; elevation, 2930′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	0	10

Coal Exposure—No. 540 on Map II.

In county road, on Fork Ridge, 0.8 mile north of Giatto; **Little Fire Creek Coal**; elevation, 2750′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	0	8

Coal Exposure—No. 541 on Map II.

In county road, 1.7 miles northeast of Springton, in low gap at lumber road crossing; **Little Fire Creek Coal**; elevation, 2985′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	8

Coal Exposure—No. 543 on Map II.

In county road on ridge, 0.7 mile north of Coaldale; **Little Fire Creek Coal**; elevation, 2815′ B.; section by Teets.

	Ft.	In.
Coal, gas (with sandstone roof and fire clay floor)	0	10

Coal Exposure—No. 544 on Map II.

In county road on Flattop Mountain, 2.3 miles southwest of Mannering; **Little Fire Creek Coal**; elevation, 2715′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	6

Coal Exposure—No. 545 on Map II.

In county road, near Virginia and West Virginia State Line, 0.8 mile southwest of Coaldale; **Little Fire Creek Coal**; elevation, 2725′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	10

No estimate will be made of the probable available coal in the Little Fire Creek seam in Raleigh, Mercer and Summers Counties, owing to the irregularity of its bed.

THE NO. 9 POCAHONTAS COAL.

The No. 9 Pocahontas Coal was not recognized in Raleigh or Summers Counties, but a few exposures were found in Mercer County along the roads near the tops of the hills.

Rock District, Mercer County.

Coal Exposure—No. 546 on Map II.

In county road on Fork Ridge, 1.0 mile northwest of Giatto; **No. 9 Pocahontas Coal**; elevation, 2860′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	0	6

Coal Exposure—No. 547 on Map II.

In county road, 1.5 miles north of Matoaka; **No. 9 Pocahontas Coal**; elevation, 2860′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with sandy shale roof and slate floor)	1	11

Coal Exposure—No. 548 on Map II.

In county road, 1.2 miles southeast of Sand Gap School; **No. 9 Pocahontas Coal**; butts, N. 38° E.; faces N. 52° W.; section by Teets.

	Ft.	In.
Coal (with shale roof and fire clay floor)	1	8

Coal Exposure—No. 549 on Map II.

In county road in low gap, 1¾ miles northeast of Springton; **No. 9 Pocahontas Coal**; elevation, 3000′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	1

Coal Exposure—No. 550 on Map II.

In county road, 1.6 miles northwest of Sand Gap School; **No. 9 Pocahontas Coal**; elevation, 3055′ B., section by Teets.

	Ft.	In.
Coal, good (with slaty shale roof and slate floor)	0	8

Coal Exposure—No. 551 on Map II.

In county road, 0.4 mile southeast of Peters Gap; **No. 9 Pocahontas Coal**; elevation, 2740′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with slate roof and floor)	2	1

Coal Exposure—No. 552 on Map II.

In the county road, on head of Buckeye Hollow of Simmons Creek, 2.8 miles north of Bramwell; **No. 9 Pocahontas Coal**; elevation, 2690′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and shale floor)	0	10

Coal Exposure—No. 553 on Map II.

In county road, one mile west of Goodwill; **No. 9 Pocahontas Coal**; elevation, 2600′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and floor).....	2	1

No estimate will be made of the probable available coal in the No. 9 Pocahontas Coal bed, owing to its irregularity and impurity.

THE NO. 8 POCAHONTAS COAL.

The No. 8 Pocahontas Coal lies at the base of the New River Group and is of little commercial value. A few sections will be given in addition to those already published in the sections on preceding pages.

Slab Fork District, Raleigh County.

Coal Exposure—No. 554 on Map II.

On the west end of the Devils Backbone, on the north side of Tommy Creek, 2.5 miles west of Odd; **No. 8 Pocahontas Coal**; elevation, 2430′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	0	11

Coal Exposure—No. 555 on Map II.

On Wiley Spring Branch of Devils Fork of Guyandot River, 3.2 miles northeast of Basin; **No. 8 Pocahontas Coal**; elevation, 2505′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate and fire clay floor).....	1	6

McCreery Brothers Prospect—No. 556 on Map II.

On the head of the Right Fork of Meadow Fork, 1.1 miles northeast of Long Wanted School; **No. 8 Pocahontas Coal**; elevation, 2860 B.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor).....	1	7

A. J. Meadow Opening—No. 557 on Map II.

On the south side of Wiley Spring Branch, 2.7 miles southwest ot Barn and at the Hatcher School; **No. 8 Pocahontas Coal**; mined for school and other domestic purposes; elevation, 2715′ B.; section by Teets.

	Ft.	In.
Coal, hard (with shale roof and slate floor).....	0	10

Wm. Graham Opening—No. 558 on Map II.

On Flattop Mountain at the head of Lefthand Fork of Bluff Fork of Devils Fork, just south of school house, 1.3 miles north of Bluff Mountain; **No. 8 Pocahontas Coal**; elevation, 2940′ B.; butts, N. 41° W.; faces, N. 49° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, impure (with shale roof)..	0′	6″		
Coal	3	6		
Bone	0	1		
Coal (to slate floor).....	0	6	4	7

S. T. Shrewsbury Opening—No. 559 on Map II.

On Bluff Fork of Devils Fork of Guyandot River, just west of Long Wanted School; **No. 8 Pocahontas Coal**; elevation, 2790′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with sandstone roof).....	0′	3″		
Slate, gray.....	0	5		
Coal (to slate floor).....	1	3	1	11

Western Pocahontas Coal Co. Prospect—No. 560 on Map II.

On the head of a branch of Bluff Fork, 0.8 mile almost due east of Basin; **No. 8 Pocahontas Coal**; elevation, 2605′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal** (with slate roof).....	2′	0″		
2.	**Coal**, hard.....	1	3		
3.	**Coal**	1	3		
4.	**Coal** (under water).....	0	8	5	2

The analysis of a sample (290-T) collected from Nos. 1, 2 and 3 of above section, as reported by Messrs. Hite and

Krak, is published under **No. 560** in the first table of analyses at the end of this Chapter.

Western Pocahontas Coal Co. Prospect—No. 561 on Map II.

Near the head of Beetree Branch of Devils Fork, 0.9 mile almost due north of Basin; **No. 8 Pocahontas Coal**; elevation, 2355′ B.; butts, N. 38° W.; faces, N. 52° E.; greatest rise, southeast; section by Teets

			Ft.	In.
Coal, hard (with sandstone roof)	0′	6″		
Slate, dark	0	1		
Coal (to slate floor)	2	1	2	8

Shady Spring District, Raleigh County.

The No. 8 Pocahontas Coal is thin in Shady Spring District, as shown by the following section:

Wright Coal & Coke Co. Exposure—No. 562 on Map II.

On the east side of Piney Creek on incline at Wright; **No. 8 Pocahontas Coal**; elevation, 1960′ B.; section by Teets.

	Ft.	In.
Coal, soft, impure (with slate roof and floor)	0	9

Several other exposures were found in the No. 8 Pocahontas Coal in Shady Spring District, but they were thin and of no commercial value.

Rock District, Mercer County.

A number of exposures of the No. 8 Pocahontas Coal was found along the roads in Mercer County. The coal is there impure and of no commercial value.

Coal Exposure—No. 563 on Map II.

In county road, 0.2 mile south of Clarks Gap; **No. 8 Pocahontas Coal**; elevation, 2780′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale and sandstone roof and slate floor)	1	10

Coal Exposure—No. 564 on Map II.

In county road, one mile north of Giatto; **No. 8 Pocahontas Coal**; elevation, 2785′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	4

Coal Exposure—No. 565 on Map II.

In county road, one mile north of Giatto; **No. 8 Pocahontas Coal**; elevation, 2800′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	2	4

Coal Exposure—No. 566 on Map II.

In county road, 1.1 miles southwest of Giatto; **No. 8 Pocahontas Coal**; elevation, 2750′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	6

Coal Exposure—No. 567 on Map II.

In county road, 0.2 mile north of Sand Gap School; **No. 8 Pocahontas Coal**; elevation, 2910′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with sandy shale roof and slate and fire clay floor)	0	6

Coal Exposure—No. 568 on Map II.

In county road, 1.1 miles south of Giatto; **No. 8 Pocahontas Coal**; elevation, 2820′ B.; section by Teets.

	Ft.	In.
Coal (with shale roof and slate and fire clay floor)	1	3

Coal Exposure—No. 569 on Map II.

In county road in Peters Gap, 1.0 mile southwest of Giatto; **No 8 Pocahontas Coal**; elevation, 2708′ L.; section by Teets.

	Ft.	In.
Coal, weathered (with shale roof and floor)	2	1

Western Pocahontas Coal Co. Prospect—No. 570 on Map II.

On head of Crane Creek, 0.6 mile northwest of Mannering; **No. 8 Pocahontas Coal**; elevation, 2660′ B.; section by Teets.

		Ft.	In.
Coal (with slate roof)	1′ 0″		
Slate, gray	0 0½		
Coal, hard (to slate floor)	0 10	1	10½

Coal Exposure—No. 571 on Map II.

In county road at head of Buckeye Hollow of Simmons Creek, 1.4 miles west of Goodwill; **No. 8 Pocahontas Coal**; elevation, 2675′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	0	8

Coal Exposure—No. 572 on Map II.

In county road, one mile west of Goodwill; **No. 8 Pocahontas Coal**; elevation, 2640′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	1

Coal Exposure—No. 573 on Map II.

In road on ridge at head of Lower Georges Branch of Crane Creek, 1.0 mile west of Crystal; **No. 8 Pocahontas Coal**; elevation, 2700′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with sandy shale roof and slate and fire clay floor)	0	6

Coal Exposure—No. 574 on Map II.

In county road, one mile south of Giatto; **No. 8 Pocahontas Coal**; elevation, 2832′ L.; section by Teets.

	Ft.	In.
Coal, weathered (with shale roof and slate floor)	1	9

Coal Exposure—No. 599 on Map II.

On ridge between Crane Creek and Lefthand Fork of Widemouth Creek, 0.6 mile west of Lowe; **No. 8 Pocahontas Coal**; elevation, 2725′ B.; section by Krebs.

	Ft.	In.
Coal, soft, visible (with slate roof)	2	0

Coal Exposure—No. 601 on Map II.

In county road, 0.8 mile southwest of Giatto; **No. 8 Pocahontas Coal**; elevation, 2640′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	11

Quantity of No. 8 Pocahontas Coal Available.

Based on the evidence of the preceding pages and with a planimeter determination of the area by Teets, the following estimate is made of the probable amount of No. 8 Pocahontas Coal:

Probable Amount of No. 8 Pocahontas Coal.

Counties by Districts.	Thickness of Coal Assumed. Ft.	In.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Raleigh—Slab Fork	1	0	25	16,000	696,960,000	27,878,400
Mercer—Rock	1	6	15	9,600	627,264,000	25,090,560
Totals for both counties			40	25,600	1,324,224,000	52,968,960

COALS IN THE POCAHONTAS GROUP.

The coals in the Pocahontas Group, discussed in this Report, cover a portion of Mercer, Summers and Raleigh Counties and the greatest development is recorded in Mercer County, where the No. 3 Pocahontas Coal is mined commercially along Bluestone River and its tributaries.

THE NO. 7 POCAHONTAS COAL.

The No. 7 Pocahontas Coal is thin and impure in Raleigh, Mercer and Summers Counties. A few sections will be given of the No. 7 Pocahontas Coal to show its thickness and structure.

Slab Fork District, Raleigh County.

Coal Exposure—No. 574A on Map II.

In Virginian Railway cut opposite the mouth of Alderson Branch of Winding Gulf, 0.6 mile north of Tams; **No. 7 Pocahontas Coal**; elevation, 1785′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	2

Coal Exposure—No. 575 on Map II.

In county road nearly opposite the mouth of Bragg Branch of Tommy Creek, 3.2 miles southwest of Stonecoal Junction; **No. 7 Pocahontas Coal**; elevation, 2100′ B.; section by Teets.

	Ft.	In.
Coal (with shale and fire clay roof and slate floor)	0	6

Coal Exposure—No. 576 on Map II.

In county road on north side of Tommy Creek, 2.6 miles west of Odd; **No. 7 Pocahontas Coal**; elevation, 2435′ B.; section by Teets.

	Ft.	In.
Coal, soft (with shale roof and floor).....	1	3

Shady Spring District, Raleigh County.

The following section was measured by Krebs in the incline in the section of the Wright Coal & Coke Co. Mine No. 1 on Piney Creek:

Coal Exposure—No. 577 on Map II.

No. 7 Pocahontas Coal; elevation, 1940′ B.

		Ft.	In.
Coal, soft (with green shale roof) .....0′	3 ″		
Slate 0	0½		
Coal, soft (to greenish shale floor) 1	0½	1	4

Rock District, Mercer County.

In addition to the measurements of the No. 7 Pocahontas Coal already given in the generalized sections in Mercer County, the following sections were obtained:

Coal Exposure—No. 578 on Map II.

In county road, 0.9 mile north of Giatto; **No. 7 Pocahontas Coal**; elevation, 2690′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	6

Coal Exposure—No. 579 on Map II.

In road, 0.5 mile northeast of Sylvia; **No. 7 Pocahontas Coal**; elevation, 2775′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	2	2

Coal Exposure—No. 580 on Map II.

In county road on ridge just south of Coaldale; **No. 7 Pocahontas Coal**; elevation, 2580′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	0

Coal Exposure—No. 581 on Map II.

In county road, 0.3 mile west of Ruth; **No. 7 Pocahontas Coal**; elevation, 2600′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandstone roof and slate floor)	0	6

Coal Exposure—No. 582 on Map II.

In county road, 0.5 mile northwest of Bramwell; **No. 7 Pocahontas Coal**; elevation, 2685′ B.; section by Teets.

	Ft.	In.
Coal (with shale and sandstone roof and slate floor)	1	10

A. D. Harrah Coal Exposure—No. 583 on Map II.

On side of road leading from Camp Creek to Bluff Mountain, 1.8 miles east of Billy Mills School; **No. 7 Pocahontas Coal**; elevation, 2960′ B.; section by Krebs.

	Ft.	In.
Coal, soft (with slate roof and floor).....	0	6

Summers County.

The No. 7 Pocahontas Coal appears near the top of Whiteoak Mountain in Summers County and is usually very thin.

No estimate was made of the available coal in the No. 7 Pocahontas bed in Raleigh, Mercer and Summers Counties.

THE NO. 6 POCAHONTAS COAL.

The No. 6 Pocahontas Coal is of sufficient thickness and purity in a portion of Raleigh and Mercer Counties to be of commercial value.

Town District, Raleigh County.

No surface exposures in the No. 6 Pocahontas Coal bed were found in Town District, but this bed was encountered in a number of core test holes drilled in the district. On previous pages of this Report, sections of this coal are given in the records of core tests published.

Slab Fork District, Raleigh County.

The No. 6 Pocahontas Coal outcrops along the waters of Winding Gulf, Tommy Creek and Devils Fork in the southern part of Slab Fork District.

Beaver Coal Company Opening—No. 585 on Map II.

On the west side of Winding Gulf at mouth of Alderson Branch, 0.6 mile north of Tams; **No. 6 Pocahontas Coal**; butts, N. 50° W.; faces, N. 40° E.; elevation, 1760′ B.; section by Krebs; mined for fuel in railroad camp when railway was constructed on Winding Gulf.

	Ft.	In.
Shale, dark plant fossils (with sandstone roof)..	1	0
Coal, soft (to slate floor).....	2	4

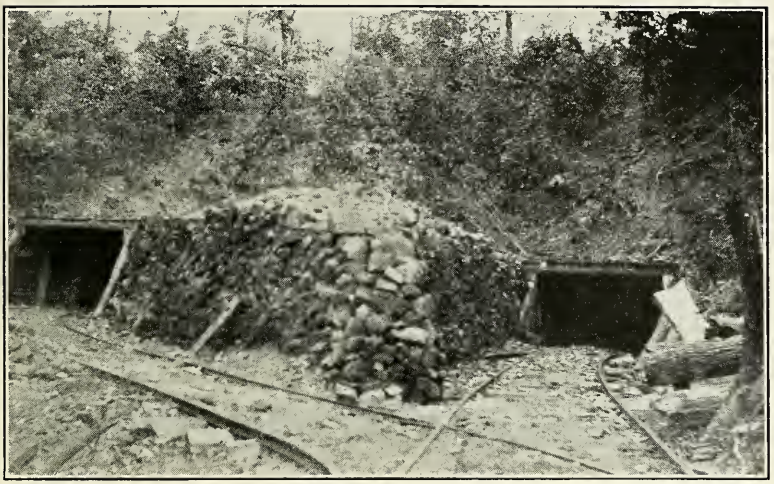

PLATE XXV(a).—No. 6 Pocahontas Coal of Buckeye Coal & Coke Company on Simmons Creek, Mercer County.

PLATE XXV(b).—View of Giatto showing Pocahontas Group.

Coal Exposure—No. 586 on Map II.

In county road on the north side of Stonecoal Creek, just above its mouth; **No. 6 Pocahontas Coal**; elevation, 1735′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	3

Davis & Thompson Prospect—No. 587 on Map II.

On the west side of Riffe Branch of Stonecoal Creek, 2.1 miles southeast of Tams; **No. 6 Pocahontas Coal**; elevation, 1755′ B.; butts, and faces, irregular; section by Teets.

		Ft.	In.
Coal, weathered (with shale roof)	1′ 6½″		
Shale, gray	0 8½		
Coal, weathered (to slate floor)	1 10	4	1

Davis & Thompson Prospect—No. 588 on Map II.

On the east side of Riffe Branch of Stonecoal Creek, 2.3 miles southeast of Tams; **No. 6 Pocahontas Coal**; elevation, 1770′ B.; butts, N. 56° W.; faces, N. 44° E.; greatest rise, southeast; mined by tenants for home use; section by Teets.

		Ft.	In.
1. **Coal,** soft (with sandstone roof)	1′ 4″		
2. Slate, gray	0 1		
3. **Coal,** very soft (to slate floor)	1 9	3	2

The analysis of a sample (275-T) collected from Nos. 1 and 3 of above section about 40 feet under cover, as reported by Messrs. Hite and Krak, is published under **No. 588** in the first table at the end of this Chapter.

Davis & Thompson Prospect—No. 589 on Map II.

On the south side of Stonecoal Creek, just below mouth of Riffe Branch, 3.0 miles south of Tams; **No. 6 Pocahontas Coal**; elevation, 1755′ B.; butts, N. 45° E.; faces, N. 45° W.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal, soft (with shale roof)	1′ 4″		
Slate, gray	0 5		
Coal (to slate floor)	1 7	3	4

McCreery Brothers Prospect—No. 590 on Map II.

One-half mile up Farley Branch of Stonecoal Creek and on the west side of branch; **No. 6 Pocahontas Coal**; elevation, 1865′ B.; butts, N. 44° W.; faces, N. 46° E.; section by Teets.

			Ft.	In.
Coal, soft, weathered (with shale roof)	1′	4″		
Slate, gray	0	7		
Coal soft, weathered (to slate floor)	1	6	3	5

McCreery Brothers Prospect—No. 591 on Map II.

On the south side of Stonecoal Creek, almost opposite the mouth of Farley Branch; **No. 6 Pocahontas Coal**; elevation, 1875′ B.; butts, N. 33° W.; faces, N. 57° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, soft (with shale roof)	1′	7″		
Slate, gray	2	7		
Coal (to slate floor)	1	6	5	8

McCreery Brothers Prospect—No. 592 on Map II.

On the west side of Stonecoal Creek, 1.6 miles northwest of Odd; **No. 6 Pocahontas Coal**; elevation, 2220′ B.; butts, N. 44° W.; faces N. 46° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	6″		
Slate, gray	0	4		
Coal	0	4		
Slate, dark	0	5		
Coal (to slate floor)	2	2	3	9

McCreery Brothers Prospect—No. 593 on Map II.

On Laurel Fork of Stonecoal Creek, 4.5 miles just a little west of north of Odd; **No. 6 Pocahontas Coal**; elevation, 2030′ B.

			Ft.	In.
Coal, weathered (with shale roof)	2′	0″		
Shale, gray	0	5		
Coal, (to slate floor)	1	11	4	4

Coal Exposure—No. 594 on Map II.

On the east side of Devils Fork, in county road, 2.0 miles north of Basin; **No. 6 Pocahontas Coal**; elevation, 2200′ B.; section by Teets.

	Ft.	In.
Coal, impure (with gray shale roof and slate floor)	0	11

Coal Exposure—No. 595 on Map II.

In C. & O. Ry. cut at Tams, on the east side of Winding Gulf; **No. 6 Pocahontas Coal**; elevation, 1745′ B.; section by Teets.

			Ft.	In.
Coal, weathered (with shale roof)	1′	1″		
Coal, gas	0	11		
Bone	0	2		
Coal (with slate floor)	0	10	3	0

In addition to the above measurements, sections of the No. 6 Pocahontas Coal are published in Core Tests Nos. 136, 154 and 157 and in the Left Fork of Allen Creek Section on previous pages of this Report.

Shady Spring District, Raleigh County.

In Shady Spring District, the No. 6 Pocahontas Coal is thin and usually multiple-bedded, as shown in the following sections:

Wright Coal & Coke Co. Exposure—No. 596 on Map II.

On the east side of Piney Creek, in plane of incline at Wright Mine No. 1 near Wright; **No. 6 Pocahontas Coal**; elevation, 1880′ B.; section by Teets.

			Ft.	In.
Coal (with gray shale roof)	0′	6 ″		
Slate	0	0½		
Coal (with slate roof)	0	8½	1	3

Royal Coal & Coke Co. Exposure—No. 597 on Map II.

On south side of New River at Royal on incline; **No. 6 Pocahontas Coal**; elevation, 1920′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Shale, sandy, buff, with marine fossils.....				
Coal, soft.....	0′	11″		
Shale, gray.....	0	1		
Coal, soft (to slate floor).....	1	0	2	0

Coal Exposure—No. 598 on Map II.

In the county road on the west side of Glade Creek, 1.3 miles southwest of Glade Station; **No. 6 Pocahontas Coal**; elevation, 2250′ B.; section by Teets.

			Ft.	In.
Coal (with slate roof).....	2′	0″		
Slate	1	0		
Coal (to slate floor).....	1	0	4	0

Rock District, Mercer County.

The No. 6 Pocahontas Coal is of commercial thickness in Mercer County and occurs from 130 to 180 feet over the No. 3 bed. The coal where mined gives a reasonably good coking coal, and also a good steam coal. Tests of this coal were made by the U. S. Geological Survey at St. Louis, and published in Professional Paper No. 48, Part I, pages 132-3 and 258, and Part III, pages 1364 and 1365. A discussion of this coal is given in Volume II(A) of the Survey Reports, pages 169-177. A few sections will now be given.

Western Pocahontas Coal Co. Prospect—No. 600 on Map II.

On the west side of the Lefthand Fork of Widemouth Creek, 1.2 miles southeast of Clarks Gap; **No. 6 Pocahontas Coal**; elevation, 2700′ B.; butts, N. 24° W.; faces, N. 66° E., section by Teets.

			Ft.	In.
Coal (with slate roof).....	0′	4″		
Slate	0	4		
Shale, gray.....	1	1		
Coal	2	3		
Shale, gray.....	1	2		
Coal (to slate floor).....	2	9	7	11

Western Pocahontas Coal Co. Prospect—No. 602 on Map II.

On the west side of the Lefthand Fork of Widemouth Creek; 1.4 miles northwest of Giatto; **No. 6 Pocahontas Coal**; elevation, 2675′ B.; butts, N. 25° W.; faces, N. 65° E.; section by Teets.

			Ft.	In.
Coal (with shale roof)	2′	3″		
Shale, gray	1	3		
Coal (to slate floor)	2	8	6	2

Coal Exposure—No. 603 on Map II.

In county road, 1¼ miles north of Matoaka; **No. 6 Pocahontas Coal**; elevation, 2720′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	1	9

Coal Exposure—No. 603A on Map II.

In county road, 0.5 mile south of Peters Gap; **No. 6 Pocahontas Coal**; elevation, 2620′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with shale roof and slate floor)	1	8

Coal Exposure—No. 604 on Map II.

In county road, 1.3 miles north of Mora (McComas P. O.); **No. 6 Pocahontas Coal**; elevation, 2620′ B.; butts, N. 25° W.; faces, N. 65° E.; section by Teets.

			Ft.	In.
Coal, weathered (with shale roof)	1′	10″		
Shale, gray	0	10		
Coal, impure (to fire clay floor)	1	1	3	9

The Survey is indebted to Mr. Stuart M. Buck, the Mining Engineer of Bramwell, W. Va., for some valuable information concerning this No. 6 Coal at the locality where he had it opened and prospected on Crane Creek, immediately above an opening on No. 3 Pocahontas at the Sagamore mine. Mr. Buck's letter, which embodies much valuable information concerning this No. 6 Coal in Mercer County, was first published in Volume II(A), pages 169 to 171, of the Survey Reports, and later republished in Bulletin 2, pages 223 to 225.

The tests of this coal made by the United States Geological Survey at St. Louis, as published in Professional Paper No. 48, Part I, pages 132 and 133, and 258, and Part III, pages 1364 and 1365, were published by the West Virginia Geological Survey in Volume II(A), pages 171 to 174, and later republished in Bulletin 2, pages 225 to 228. As both the above mentioned Reports are available and the Survey's funds are limited, we are compelled to forego their republication in this Volume.

Western Pocahontas Coal Co. Prospect—No. 605 on Map II.

In hollow, 1.2 miles north of McComas; 0.1 mile southeast of Prospect No. 606; **No. 6 Pocahontas Coal**; elevation, 2620′ B.; section by Teets.

	Ft.	In.
Coal, visible (with slate roof and floor).....	2	8

Western Pocahontas Coal Co. Prospect—No. 606 on Map II.

In stone quarry, 0.3 mile southwest of McComas; **No. 6 Pocahontas Coal**; elevation, 2525′ B.; butts, N. 36° W.; faces, N. 54° E.; section by Teets.

		Ft.	In.
Coal (with sandy shale roof)...3′	4″		
Shale, gray.....1	2		
Coal 0	8		
Slate, gray.....0	2		
Coal 0	3		
Slate, dark.....0	1		
Coal (to slate floor).....0	3	5	11

Western Pocahontas Coal Co. Prospect—No. 607 on Map II.

Near the head of Crane Creek, 0.2 mile west of Mannering; **No. 6 Pocahontas Coal**; elevation, 2540′ B.; butts, N. 35° W.; faces, N. 55° E.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	3	2

Coal Exposure—No. 608 on Map II.

Near county road, just southeast of Coaldale; **No. 6 Pocahontas Coal**; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	2	1

Coal Exposure—No. 609 on Map II.

In county road, 0.6 mile south of Matoaka; **No. 6 Pocahontas Coal**; elevation, 2705′ B.; butts, N. 37° W.; faces, N. 53° E.; section by Teets.

	Ft.	In.
Coal (with sandy shale roof and slate floor).....	2	3

Coal Exposure—No. 610 on Map II.

In county road, 0.5 mile northeast of Matoaka; **No. 6 Pocahontas Coal**; elevation, 2810′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandstone roof and slate floor)	0	6

The Buckeye Coal and Coke Company has recently prospected and opened a mine in this bed on Simmons Creek where the following section was obtained by Krebs:

Buckeye Coal & Coke Co. Mine—No. 67 on Map II.

On the head of Buckeye Hollow of Simmons Creek; **No. 6 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, southeast; section by Krebs.

		Ft.	In.
1.	Sandstone		
2.	Slate, full of plant fossils.....	0	4
3.	Slate, with iron pyrites.....	0	8
4.	**Coal**, gas.....2′ 6″		
5.	**Coal**, gas, soft (to slate floor) 2 0	4	6

The composition of a sample (495-K) collected from Nos. 4 and 5 of above section, as reported by Messrs. Hite and Krak, is published under **No. 67** in the first table of analyses at the end of this Chapter.

Northeast about 1.8 miles to the divide between Flipping and Crane Creeks, the following section was obtained by Krebs:

Pocahontas Coal & Coke Co. Mine—No. 611 on Map II.

0.9 mile southwest of Crystal; **No. 6 Pocahontas Coal**; elevation, 2625′ B.; coal mined for local fuel by **W. L. Coffey**; section by Krebs

				Ft.	In.
1.	Shale, sandy, buff, marine fossils at base.....			4	0
2.	**Coal**, soft.....	0′	1″		
3.	Shale, dark.....	0	6		
4.	**Coal**	0	1		
5.	Sulphur	0	1		
6.	**Coal**, soft (to slate floor)...	3	4	4	1

The analysis of a sample (493-K) collected from No. 6 of the above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 611.**

Jumping Branch District, Mercer County.

About two miles east of Barn and north of Camp Creek, several openings have been made in the No. 6 Pocahontas Coal, at one of which the following section was obtained by Krebs:

John Croy Prospect—No. 612 on Map II.

On north side of Camp Creek, 1.4 miles southeast of Barn; **No. 6 Pocahontas Coal**; elevation, 2700′ B.; section by Krebs.

			Ft.	In.
Coal, soft (with slate roof)....1′	8″			
Slate 0	9½			
Coal (to fire clay floor).....0	6		2	11½

John Croy Prospect—No. 613 on Map II.

On north side of Camp Creek, about 2.3 miles southeast of Barn; **No. 6 Pocahontas Coal**; elevation, 2820′ B.; section by Krebs.

			Ft.	In.
Bony coal.....0′	3″			
Coal, soft.....1	0			
Shale, green.....0	9			
Coal (to slate floor).....0	3		2	3

Quantity of No. 6 Pocahontas Coal Available.

Based on the evidence of the preceding pages and with a planimetric determination of the area on Map II, by Teets, the following estimate is made of the probable amount of No. 6 Pocahontas Coal:

Probable Amount of No. 6 Pocahontas Coal.

Counties by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Raleigh:					
Town	2′ 0″	15	9,600	836,352,000	33,454,080
Trap Hill	2 0	12	7,680	669,081,600	26,763,264
Slab Fork	2 8	25	16,000	1,951,488,000	78,059,520
Shady Spring	1 5	10	6,400	418,176,000	16,727,040
Totals	.....	62	39,680	3,875,097,600	155,003,904
Mercer:					
Jumping Branch	2′ 0″	4	2,560	223,027,200	8,921,088
Rock	3 0	6	3,840	501,811,200	20,072,448
Totals	.....	10	6,400	724,838,400	28,993,536
Totals for both Counties	.....	72	46,080	4,599,936,000	183,997,440

THE NO. 5 POCAHONTAS COAL.

The next bed of coal in descending order is the No. 5 Pocahontas. This bed is thin and impure and frequently absent in the area under discussion.

Town District, Raleigh County.

In Town District, the No. 5 Pocahontas Coal was found along Piney Creek from McCreery Station southwest at several points, but was thin and impure.

Trap Hill District, Raleigh County.

The No. 5 Pocahontas Coal does not crop in Trap Hill District.

Slab Fork District, Raleigh County.

In Slab Fork District, the No. 5 Pocahontas Coal outcrops along the waters of Winding Gulf, Stonecoal and Tommy Creeks and Devils Fork. A few sections will be given, as follows:

Coal Exposure—No. 614 on Map II.

In Virginian Railway cut, on the west side of Winding Gulf, 2 miles north of Stonecoal Junction; **No. 5 Pocahontas Coal**; elevation, 1645′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandstone roof and slate floor)	0	11

Coal Exposure—No. 615 on Map II.

In county road, 1.8 miles north of Basin; **No. 5 Pocahontas Coal**; elevation, 2190′ B.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor).....	1	10

Coal Exposure—No. 616 on Map II.

In county road, on south side of Devils Fork near mouth of Bluff Fork, 1.6 miles north of Basin; **No. 5 Pocahontas Coal**; elevation, 2170′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	1

Shady Spring District, Raleigh County.

In Shady Spring District, the No. 5 Pocahontas Coal is thin and impure as shown in the general sections already published.

Richmond District, Raleigh County.

The No. 5 Pocahontas Coal was not recognized in Richmond District.

Rock District, Mercer County.

The No. 5 Pocahontas Coal is thin and impure in Mercer County and of little commercial value. The following are a few sections measured:

Coal Exposure—No. 617 on Map II.

In county road, 0.4 mile south of Giatto; **No. 5 Pocahontas Coal**; elevation, 2610′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	0	10

Coal Exposure—No. 618 on Map II.

In county road on head of Mill Creek, 0.3 mile west of Ruth; **No. 5 Pocahontas Coal**; elevation, 2510′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and floor)	1	9

Coal Exposure—No. 619 on Map II.

In county road, 0.9 mile northwest of Bramwell; **No. 5 Pocahontas Coal**; elevation, 2610′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	1	0

Coal Exposure—No. 620 on Map II.

In county road, 0.7 mile northeast of Matoaka; **No. 5 Pocahontas Coal**; elevation, 2700′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and fire clay floor)	0	6

No estimate will be made of the available coal tonnage in the No. 5 bed, since practically very little of it will ever prove available for mining.

THE NO. 4 POCAHONTAS COAL.

The No. 4 Pocahontas Coal attains commercial thickness and purity in the southern portion of Raleigh and in portions of Summers and Mercer Counties.

Town District, Raleigh County.

In Town District, the No. 4 Pocahontas Coal is thin and impure and of no commercial value where the section has been recognized. On previous pages of this Report, the thickness of the coal is shown in Core Test Holes Nos. 63 and 72.

Slab Fork District, Raleigh County.

The records of diamond Core Test Holes Nos. 152, 153 and 156 published on previous pages of this Report show the No. 4 Pocahontas Coal thin in Slab Fork District.

ShadySpring District, Raleigh County.

Coal Exposure—No. 621 on Map II.

In the incline at Wright Mine No. 1, on the east side of Piney Creek, near Wright; **No. 4 Pocahontas Coal**; elevation, 1835′ B.; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	0	6

Coal Exposure—No. 622 on Map II.

In county road, on the west side of Glade Creek, south side of New River, 1.3 miles southwest of Glade Station; **No. 4 Pocahontas Coal**; elevation, 2260′ B.; section by Teets.

	Ft.	In.
Coal, impure (with slate roof and floor).....	1	2

W. M. Kay Local Mine Opening—No. 623 on Map II.

On west side of Glade Creek, 2 miles northeast of Crow and ¾ mile south of Table Rock; **No. 4 Pocahontas Coal**; elevation, 2365′ B.; section by Teets.

	Ft.	In.
Coal, soft (with slate roof and floor).....	2	7

S. H. Grose Local Mine Opening—No. 624 on Map II.

On south side of Lefthand Fork of Cooper Creek, 0.5 mile east of mouth of Cooper Creek; **No. 4 Pocahontas Coal**; elevation, 2800′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Dark bituminous shale.....			6	0
Coal, soft.....	0′	5″		
Coal, bony.....	0	1		
Coal, visible, soft.....	1	4		
Concealed by water.....	0	4	2	2

Rev. Simmons Local Mine—No. 625 on Map II.

On head of Cooper Creek of Glade Creek, 1.3 miles northeast of Mountview; **No. 4 Pocahontas Coal**; elevation, 2860′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

	Ft.	In.
Dark bituminous shale	3	0
Coal, soft (with slate floor)	2	8

Richmond District, Raleigh County.

The No. 4 Pocahontas Coal is usually thin and of not much commercial importance in Richmond District. A few openings were measured as follows:

David Weikle Opening—No. 626 on Map II.

On north side of Lefthand Fork of Cooper Creek, 0.8 mile northeast of mouth of Cooper Creek; **No. 4 Pocahontas Coal**; elevation, 2810′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

		Ft.	In.
Coal, hard (with dark bituminous shale roof)	0′ 5″		
Bone	0 1		
Coal, hard	1 6		
Coal, soft (to dark shale floor)	0 6	2	6

K. & M. Ry. Prospect—No. 627 on Map II.

On west side of Pinch Creek, 2 miles northwest of Pluto; **No. 4 Pocahontas Coal**; elevation, 2815′ B.; not fully driven under cover; section by Krebs.

		Ft.	In.
Coal, soft (with sandstone roof)	0′ 2″		
Shale, dark	1 0		
Coal, soft, visible	2 0	3	2

Rock District, Mercer County.

The No. 4 Pocahontas Coal is not mined commercially in Mercer County. A few sections will be given, as follows:

Coal Exposure—No. 628 on Map II.

In county road, 1.1 miles southwest of Giatto; **No. 4 Pocahontas Coal**; elevation, 2600′ B.; section by Teets.

	Ft.	In.
Coal, visible (with slate roof)	1	6

Coal Exposure—No. 629 on Map II.

In county road, 0.2 mile north of Ruth; **No. 4 Pocahontas Coal**; elevation, 2460′ B.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor)	0	5

A. D. Harrah Exposure—No. 630 on Map II.

On side of road leading from Camp Creek to Bluff Mountain, 1.5 miles northeast of Bluff Mountain; **No. 4 Pocahontas Coal**; elevation, 2600′ B.; section by Krebs.

	Ft.	In.
Coal, soft (with shale roof)	1	6

Western Pocahontas Coal & Coke Co. Opening. No. 631 on Map II.

On side of road on west side of Lefthand Fork of Widemouth Creek, 1.2 miles west of Giatto; **No. 4 Pocahontas Coal**; elevation, 2610′ B.; section by Krebs.

		Ft.	In.
Coal, soft (with shale roof)	0′ 6″		
Bony coal	0 6		
Coal, soft (to fire clay floor)	2 0	3	0

Jumping Branch District, Summers County.

The No. 4 Pocahontas Coal was thin where observed in the mountainous part of Jumping Branch District, Summers County. Exposures along the road showed from 6 inches to one foot of coal.

The following section is exposed in the road leading from the top of Whiteoak Mountain to Jumping Branch, as reported by Krebs:

Coal Exposure—No. 584 on Map II.

	Ft.	In.
Coal, soft, impure (with shale roof and floor), **No. 4 Pocahontas**, elevation, 2960′ B.....	1	6

Owing to the irregularity of the No. 4 Pocahontas seam. no estimate will be made of the probable amount of coal in this bed.

THE NO. 3 POCAHONTAS COAL.

The No. 3 Pocahontas Coal is of commercial thickness in a large portion of Raleigh County, and is the important coal in Mercer County.

Town District, Raleigh County.

In Town District, the No. 3 Pocahontas Coal crops out along Piney Creek, from its mouth to a point about 0.3 mile northwest of Rodes. In the western and northern parts of the district, the coal lies from 600 to 1000 feet beneath the surface as shown by the numerous borings. On previous pages of this Report, the records of diamond Core Test Holes Nos. 49, 63, 67 and 72 are published and the sections of the No. 3 Pocahontas Coal are given.

Beaver Coal Co. Exposure—No. 632 on Map II.

On west side of Piney Creek, 0.5 mile north of Rodes; **No. 3 Pocahontas Coal**; elevation, 1888′ L.; section by Krebs.

	Ft.	In.
Sandstone, massive.....		
Shale, dark.....	1	0
Coal, bony, and shale.....	0	9
Slate, with plant fossils.....	7	0
Coal, soft, columnar.....2′ 10″		
Shale, dark, 3″ to.....0 11		
Coal, gas.....2 0	5	9

It will be noted from this section and those in the core test holes that the No. 3 Pocahontas Coal is an important bed in Town District.

Figure 9.—Showing Probable Minable Area of Eagle and No. 3 Pocahontas Coals in Raleigh, Mercer and Summers Area.

Trap Hill District, Raleigh County.

The No. 3 Pocahontas Coal does not crop in Trap Hill District, but it has been tested in different parts of the district by diamond core test holes, Nos. 88, 112 and 134, the logs of which are published on previous pages of this Report. The sections show that the No. 3 Pocahontas Coal is an important coal bed in Trap Hill District.

Slab Fork District, Raleigh County.

The No. 3 Pocahontas Coal is an important bed in Slab Fork District. Several commercial mines are being operated in this bed in its southern part. A few sections will now be given showing its thickness and structure.

Piney Coking Coal Land Co. Prospect—No. 633 on Map II.

On the north side of Tommy Creek, 0.6 mile east of mouth of Roaring Branch; **No. 3 Pocahontas Coal**; elevation, 1940′ B.; butts, N. 24° W.; faces, N. 66° E.; greatest rise, southeast; section by Teets.

			Ft.	In
Coal (with sandstone and shale roof)	0′	3 ″		
Bone	0	6		
Coal	2	1		
Slate	0	0½		
Coal, gas (to slate floor)	1	6½	4	5

Piney Coking Coal Land Co. Prospect—No. 634 on Map II.

On the east side of the Lefthand Fork of Tommy Creek, 3 miles west of Odd; **No. 3 Pocahontas Coal**; elevation, 1945′ B.; butts, N. 25° W.; faces, N. 65° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal** (with shale and slate roof)	0′	3″		
2.	Bone	0	7		
3.	**Coal**	1	5		
4.	Bone	0	1		
5.	**Coal**, columnar (to slate floor)	1	7	3	11

The composition of a sample (286-T) collected from Nos. 1, 3 and 5 of above section, as reported by Messrs. Hite and

Krak, is published under **No. 634** in the first table of analyses at the end of this Chapter.

Piney Coking Coal Land Co. Opening—No. 635 on Map II.

On the south side of Tommy Creek, just below the mouth of the Lefthand Fork; **No. 3 Pocahontas Coal;** elevation, 1910′ B.; butts, N. 25° W.; faces, N. 65° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	3″		
Bone	0	6		
Coal	1	4		
Slate	0	1		
Coal (to slate floor)	1	6	3	8

Western Pocahontas Coal Co. Prospect—No. 636 on Map II.

On the south side of Stonecoal Creek, 0.4 mile southeast of Stonecoal Junction; **No. 3 Pocahontas Coal;** elevation, 1600′ B.; butts, N. 24° W.; faces, N. 66° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal,** gas (with slate roof)	0′	5½″		
2.	Bone	0	0½		
3.	**Coal,** hard	0	2		
4.	**Coal,** bony	0	3		
5.	**Coal,** soft	2	0		
6.	**Coal,** glossy (to slate floor)	1	2	4	1

The composition of a sample (274-T) collected from Nos. 1, 3, 5 and 6 of above section, as reported by Messrs. Hite and Krak, is published under **No. 636** in the first table of analyses at the end of this Chapter.

Piney Coking Coal Land Co. Prospect—No. 637 on Map II.

On Stonecoal Creek, 0.7 mile below mouth of Farley Branch, 2.3 miles northeast of Stonecoal Junction; **No. 3 Pocahontas Coal;** elevation, 1675′ B.; butts, N. 39° W.; faces, N. 51° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, soft (with sandstone roof)	0′	8½″		
Bone	0	3		
Coal, soft, columnar (to slate floor)	2	2½	3	2

Piney Coking Coal Land Co. Opening—No. 638 on Map II.

On the north side of Stonecoal Creek, at mouth of Farley Branch; **No. 3 Pocahontas Coal**; elevation, 1700′ B.; butts, N. 37° W.; faces, N. 53° E.; greatest rise, southeast; section by Teets; mined by **Pleasant Lilly** for fuel.

				Ft.	In.
1.	Draw slate (with sandstone cover) 6″ to.....			0	10
2.	**Coal**, soft.....	0′	9″		
3.	Bone	0	3		
4.	**Coal**, soft (to slate floor)...	2	3	3	3

The composition of a sample (276-T) collected from Nos. 2 and 4 of above section, as reported by Messrs. Hite and Krak, is published under **No. 638** in the first table of analyses at the end of this Chapter.

Piney Coking Coal Land Co. Prospect—No. 639 on Map II.

On the south side of Stonecoal Creek, 2.8 miles northeast of Stonecoal Junction; **No. 3 Pocahontas Coal**; elevation, 1720′ B.; butts, N. 38° W.; faces, N. 52° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof).....	0′	9″		
Bone	0	3		
Coal, soft (with slate floor)....	2	2	3	2

Piney Coking Coal Land Co. Prospect—No. 640 on Map II.

On the northeast side of Stonecoal Creek, 3 miles northwest of Odd; **No. 3 Pocahontas Coal**; elevation, 1980′ B.; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal** (with shale roof).....	0′	5½″		
2.	Bone	0	3		
3.	**Coal** (to slate floor).....	2	1	2	9½

The composition of a sample (279-T) collected from Nos. 1 and 3 of above section, as reported by Messrs. Hite and Krak, is published under **No. 640** in the first table of analyses at the end of this Chapter.

Piney Coking Coal Land Co. Prospect—No. 641 on Map II.

On the north side of Tommy Creek, at the mouth of Bragg Branch, 3.1 miles almost due east of Stonecoal Junction; **No. 3 Pocahontas Coal**; elevation, 1845′ L.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
1.	Sandstone and sandy shale			
2.	**Coal**	0′ 4″		
3.	Bone	0 3		
4.	**Coal**	0 7		
5.	Bone	0 3		
6.	**Coal** (to slate floor)	2 0	3	5

The analysis of a sample (282-T) collected from Nos. 2, 4 and 6 of above section, as reported by Messrs. Hite and Krak, is published under **No. 641** in the first table of analyses at the end of this Chapter.

Coal Exposure—No. 642 on Map II.

On the north side of Tommy Creek, 2.3 miles almost due west of Odd; **No. 3 Pocahontas Coal**; elevation, 2115′ B.; butts, N. 34° W.; faces, N. 56° E.; section by Teets.

		Ft.	In.
Sandstone, massive		30	0
Shale, gray		3	0
Shale, limy, marine fossils		0	5
Slate, bony		0	3
Coal	0′ 1″		
Bone	0 6		
Coal, semi-bone	1 0		
Coal	0 5		
Bone	0 3		
Coal	0 6		
Bone	0 4		
Slate, bony	0 7		
Coal, soft (to slate floor)	2 2	5	10

Geo. W. Meadow Opening—No. 643 on Map II.

On the south side of Tommy Creek, 2.6 miles west of Odd; **No. 3 Pocahontas Coal**; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
Coal (with shale roof)	0′ 4″		
Bone	0 5		
Coal, bony	0 6		
Coal	1 0		
Bone	0 1		
Coal (to slate floor)	1 8	4	0

J. H. McKinney Opening—No. 644 on Map II.

On the north side of Tommy Creek, 2.9 miles west of Odd; **No. 3 Pocahontas Coal**; elevation, 1960′ B.; butts, N. 35° W.; faces, N. 55° E.; greatest rise, southeast; section by Teets.

		Ft.	In.
1.	**Coal** (with shale roof).....0′ 6″		
2.	Bone 0 3		
3.	**Coal**, bony.....0 6		
4.	**Coal** 1 1		
5.	Slate 0 2½		
6.	**Coal** (to slate floor).....1 10	4	4½

The analysis of a sample (288-T) collected from Nos. 1, 4 and 6 of above section, as reported by Messrs. Hite and Krak, is published under **No. 644** in the first table at the end of this Chapter.

J. H. McKinney Opening—No. 645 on Map II.

On the north side of Tommy Creek, 3 miles west of Odd; **No. 3 Pocahontas Coal**; elevation, 1950′ B.; butts, N. 36° W.; faces, N. 54° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale roof).....0′ 3″		
Bone 0 7		
Coal 1 4		
Slate 0 2		
Coal (to slate floor).....2 0	4	4

Western Pocahontas Coal Co. Prospect—No. 646 on Map II.

On the north side of Devils Fork of Guyandot River, 2.6 miles north of Basin; **No. 3 Pocahontas Coal**; elevation, 1850′ B.; butts, N. 36° W.; faces, N. 54° E.; section by Teets.

	Ft.	In.
Coal (with sandstone roof)....0′ 6″		
Bone 0 9		
Coal (to slate floor).....2 4	3	7

Coal Exposure—No. 647 on Map II.

In Virginian Railway cut at the mouth of Devils Fork, 0.5 mile south of Stonecoal Junction; **No. 3 Pocahontas Coal**; elevation, 1575′ B.; butts, N. 18° W.; faces, N. 72° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, impure (with sandstone roof)	0′	4″		
Bone	0	7		
Coal	2	0		
Bone	0	2		
Coal (to shale floor)	0	5	3	6

Coal Exposure—No. 648 on Map II.

On the north side of Devils Fork, 1.1 miles southeast of Stonecoal Junction; **No. 3 Pocahontas Coal**; elevation, 1610′ B.; butts, N. 17° W.; faces, N. 73° E.; section by Teets..

			Ft.	In.
Coal (with sandstone roof)	0′	5″		
Bone	0	7		
Coal	2	7		
Bone	0	3		
Coal (to gray shale floor)	0	6	4	4

Western Pocahontas Coal Co. Prospect—No. 649 on Map II.

On the north side of Devils Fork, 1.2 miles southeast of Stonecoal Junction; **No. 3 Pocahontas Coal**; elevation, 1630′ B.; butts, N. 18° W.; faces, N. 72° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	0′	5″		
Bone	0	6		
Coal	2	3		
Bone	0	3		
Coal (to gray shale floor)	0	6	3	11

Western Pocahontas Coal Co. Prospect—No. 650 on Map II.

On Devils Fork at mouth of Long Branch, 1.9 miles southeast of Stonecoal Junction; **No. 3 Pocahontas Coal**; butts, N. 19° W.; faces, N. 71° E.; greatest rise, southeast; elevation, 1680′ B.

			Ft.	In.
Slate (with sandstone cover)			0	2
Coal	0′	6″		
Bone	0	6		
Coal	2	5		
Slate	0	1		
Coal (to gray shale floor)	0	6	4	0

Western Pocahontas Coal Co. Prospect—No. 651 on Map II.

On south side of Bluff Fork of Devils Fork, 1.4 miles northeast of Basin; **No. 3 Pocahontas Coal**; elevation, 2150′ B.; butts, N. 40° E.; faces, N. 50° W.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	7½″		
Slate, cannel	0	2		
Coal, bony	1	10		
Coal	0	4		
Coal, bony	0	3		
Coal, hard (to slate floor)	1	6	4	8½

Western Pocahontas Coal Co. Prospect—No. 652 on Map II.

On the north side of Wiley Spring Branch of Devils Fork, 2.1 miles northeast of Basin; **No. 3 Pocahontas Coal**; elevation, 2235′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

			Ft.	In.
Coal, weathered, impure (with shale roof)	0′	7″		
Coal, bony	2	7		
Coal (to shale floor)	1	2	4	4

Coal Exposure—No. 653 on Map II.

In Bluff Fork of Devils Fork where the **No. 3 Pocahontas Coal** goes under, 2.5 miles east of Basin; elevation, 2485′ B.; butts, N. 34° W.; faces, N. 56° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with sandstone cover)			0	2
Shale, gray			5	10
Sandstone			0	6
Shale, gray			0	5
Coal, impure, hard	2′	2″		
Shale	5	10		
Coal, soft	0	9		
Coal, bony (to shale floor)	2	6	11	3

Western Pocahontas Coal Co. Prospect—No. 654 on Map II.

On the south side of Bluff Fork of Devils Fork, 2.2 miles east of Basin; **No. 3 Pocahontas Coal**; elevation, 2450′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal, soft (with shale roof)	0′	7 ″		
Bone	0	2½		
Coal, bony	3	3		

			Ft.	In.
Slate, hard, gray	0′	9½″		
Coal, soft (to slate floor)	0	9	5	7

Western Pocahontas Coal Co. Prospect—No. 655 on Map II.

On the north side of Bluff Fork of Devils Fork, 2 miles east of Basin; **No. 3 Pocahontas Coal**; elevation, 2390′ B.; butts, N. 38° W.; faces, N. 52° E.: greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	8″		
Coal, bony, visible	3	2	3	10

Western Pocahontas Coal Co. Prospect—No. 656 on Map II.

On the south side of Bluff Fork of Devils Fork, 1.7 miles east of Basin; **No. 3 Pocahontas Coal**; elevation, 2400′ B.; butts, N. 39° W.; faces, N. 51° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	8″		
Coal, bony	4	3		
Coal (to slate floor)	0	6	5	5

In addition to the sections already given, the diamond Core Test Holes Nos. 136, 143, 153, 156 and 157 on preceding pages of this Report give the depth and thickness of the No. 3 Pocahontas Coal.

The entire core was taken as a sample from the Beaver Coal Company Core Test No. 9 (143), published on page 285 of this Report, and the analysis of dry coal made by Messrs. Froehling and Robertson, Chemists, Richmond, Virginia, exhibits the following, as furnished by W. G. Caperton, Manager of the Slab Fork Coal Company:

	Per cent.
Moisture	0.36
Volatile Matter	16.58
Fixed Carbon	76.56
Ash	6.50
Total	100.00
Sulphur	0.625
B. T. U.	14,937

The foregoing analysis shows it an excellent steam and coking coal.

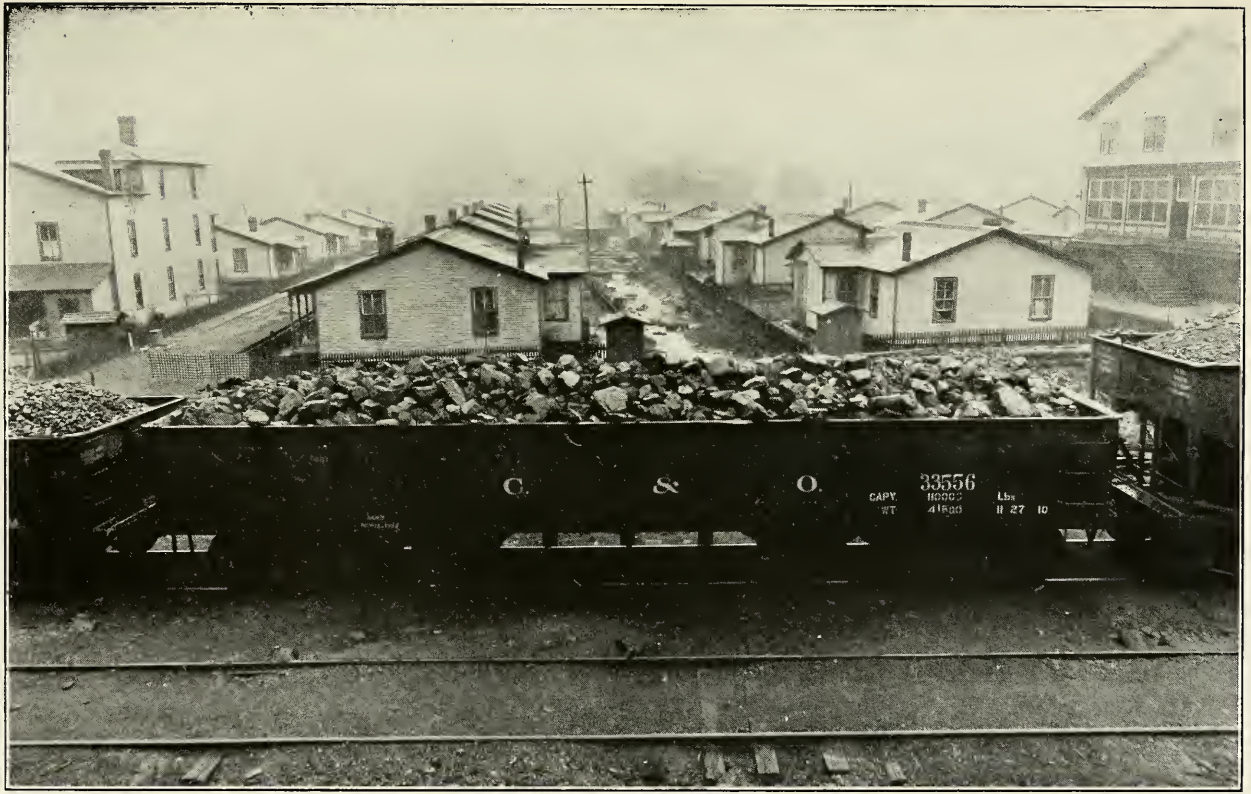

PLATE XXVI.—Carload of Beckley Coal at Tams, W. Va., ready for market.

Shady Spring District, Raleigh County.

The No. 3 Pocahontas Coal outcrops along New River and Glade Creek in Shady Spring District, but it is usually thin on the crop, while some of the core test holes in the southern part of the district show it thicker. The records of Core Test Holes Nos. 161, 163 and 165, on preceding pages of this Report, show the depth and thickness of the No. 3 Pocahontas Coal.

Richmond District, Raleigh County.

The No. 3 Pocahontas Coal outcrops in Richmond District. A few sections will be given showing its thickness and structure therein.

Calvin Richmond Opening—No. 657 on Map II.

On the west side of Pinch Creek of Glade Creek, 4.1 miles east of Crow; **No. 3 Pocahontas Coal**; elevation, 2650′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and floor).....	1	11

W. L. Dillon Opening—No. 658 on Map II.

On hill 0.9 mile west of Dillon P. O.; **No. 3 Pocahontas Coal**; elevation, 2700′ B.; butts, N. 40° W.; faces, N. 50° E.; greatest rise, rapidly southeast; section by Teets.

	Ft.	In.
Coal, weathered (with sandstone and sandy shale roof and slate floor).....	1	9

George Smith Opening—No. 659 on Map II.

Located 1.5 miles north of Pear P. O.; **No. 3 Pocahontas Coal**; elevation, 2410′ B.; butts, N. 49° E.; faces, N. 41° W.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	1	7

The analysis of a sample (283-T) collected from the above mine, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 659.**

J. W. Meador Local Mine Opening—No. 660 on Map II.

On west side of Pinch Creek, 1.0 mile west of Pluto; **No. 3 Pocahontas Coal**; elevation, 2860′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

			Ft.	In.
Coal, soft (with dark shale roof)	0′	4″		
Bone	0	1		
Coal, soft (to slate floor)	4	0	4	5

E. C. Crotty Abandoned Opening—No. 661 on Map II.

On west side of Pinch Creek, 0.6 mile west of Pluto; **No. 3 Pocahontas Coal**; elevation, 2890′ B.

			Ft.	In.
Coal (with dark shale roof)	0′	1″		
Dark shale	2	4		
Coal	0	1		
Dark shale	5	0		
Coal	0	8		
Bone	0	1		
Coal (reported)	4	0	12	3

The No. 3 Pocahontas Coal was once opened at Whiteoak Mountain, about one mile south of Pluto, by J. T. Lightner, of Charleston, W. Va., and reported to be 6′ 0″ thick. The opening has caved in and the writer was unable to get a measurement.

Rock District, Mercer County.

The No. 3 Pocahontas Coal is the most important bed in Mercer County and furnishes practically all of the commercial coal mined in that county. A number of sections will be given, showing the thickness and structure of the coal.

Algonquin Coal Company Mine—No. 68 on Map II.

On the head of Lefthand Fork of Widemouth Creek, at Clarks Gap; **No. 3 Pocahontas Coal**; elevation, 2531.5′ L.; butts, N. 29° W.; faces, N. 61° E.; principal office, New York City; section by Teets.

		Ft.	In.
1.	**Coal** (with slate roof) 0′	1	″
2.	**Coal** 1	3	
3.	Niggerhead and sulphur 0	7½	
4.	**Coal** 2	7	

			Ft.	In.
5.	Bone	0′ 1 ″		
6.	**Coal** (to slate floor).....	0 8½	5	4

The analysis of a sample (291-T) collected from Nos. 1, 2, 4 and 6 of above section, as reported by Messrs. Hite and Krak, is published under **No. 68** in the table at the end of this Chapter.

Thomas Coal Company, Mine No. 1—No. 69 on Map II.

On the west side of the Lefthand Fork of Widemouth Creek, 1.3 miles northwest of Giatto; **No. 3 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
1.	**Coal** (with gray shale roof)	1′ 0″		
2.	Bone	0 3		
3.	**Coal** (to slate floor).....	2 9	4	0

The analysis of a sample (292-T) collected from Nos. 1 and 3 of above section, as reported by Messrs. Hite and Krak, is published under **No. 69** in the first table at the end of this Chapter.

S. P. Patterson Pocahontas Co. Mine—No. 70 on Map II.

On the west side of the Righthand Fork of Widemouth Creek, 0.4 mile east of Pilot Knob; **No. 3 Pocahontas Coal**; elevation, 2575′ B.; butts, N. 24° W.; faces, N. 66° E.; section by Teets.

			Ft.	In.
1.	**Coal** (with shale roof).....		0	6
2.	Slate, dark gray.....		3	2
3.	**Coal**	1′ 1 ″		
4.	Bone	0 0½		
5.	**Coal** (to slate floor).....	2 10	3	11½

The analysis of a sample (293-T) collected from Nos. 3 and 5 of above section, as reported by Messrs. Hite and Krak, is published under **No. 70** in the first table at the end of this Chapter.

The following is a new mine just being opened about 50 feet north of Mine No. 70 above:

S. P. Patterson Pocahontas Co. Mine—No. 70A on Map II.

On the west side of the Righthand Fork of Widemouth Creek, 0.4 mile east of Pilot Knob; **No. 3 Pocahontas Coal**; elevation, 2575′ B.; section by Teets.

			Ft.	In.
1.	**Coal** (with shale roof)		0	7
2.	Slate		3	8
3.	**Coal**	1′ 1″		
4.	Bone	0 2½		
5.	**Coal** (with slate floor)	2 8	3	11½

The analysis of a sample (294-T) collected from Nos. 3 and 5 of the above section, as reported by Messrs. Hite and Krak, is given under **No. 70A** in the first table of coal analyses at the end of this Chapter.

Modock Coal Mining Co., Mine No. 1—No. 71 on Map II.

On the east side of Righthand Fork of Widemouth Creek, 1.5 miles almost due north of Sylvia; **No. 3 Pocahontas Coal**; elevation, 2572′ L.; butts, N. 26° W.; faces, N. 64° E.; section taken 5 feet under cover; section by Teets.

		Ft.	In.
Coal (with slate roof)	1′ 2″		
Bone	0 3		
Coal (to slate floor)	3 1	4	6

Modock Coal Mining Co., Mine No. 1A—No. 72 on Map II.

On the east side of Righthand Fork of Widemouth Creek, one mile northeast of Sylvia; **No. 3 Pocahontas Coal**; elevation, 2576′ L.; butts, N. 25° W.; faces, N. 65° E.; section by Teets.

		Ft.	In.
Coal (with slate roof)	1′ 0″		
Bone	0 4		
Coal (to slate floor)	3 5	4	9

Modock Coal Mining Co. Prospect—No. 662 on Map II.

On the east side of Righthand Fork of Widemouth Creek, 2.0 miles north of Sylvia; **No. 3 Pocahontas Coal**; elevation, 2580′ B.; butts, N. 26° W.; faces, N. 64° E.; section by Teets.

		Ft.	In.
Coal (with slate roof)	0′ 1″		
Coal	0 11		

			Ft.	In.
Bone	0′	4″		
Coal (to slate floor)	2	10	4	2

Modock Coal Mining Co. Prospect—No. 663 on Map II.

On the east side of Righthand Fork of Widemouth Creek; **No. 3 Pocahontas Coal;** elevation, 2585′ B.; butts, N. 24° W.; faces, N. 66° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	1″		
Coal	1	0		
Bone	0	3		
Coal (to slate floor)	3	1	4	5

Turkey Gap Coal & Coke Co., Wenonah Mine. No. 72A on Map II.

On the east side of the main fork of Righthand Fork of Widemouth Creek, just above Wenonah; **No. 3 Pocahontas Coal;** elevation, 2590′ B.; butts, N. 25° W.; faces, N. 65° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	1″		
Bone	0	4		
Coal (to slate floor)	2	9	4	2

The analysis of a composite sample from the above mine by the U. S. Geological Survey, as published under No. 40 on page 215 of Bulletin 2, W. Va. Geological Survey Reports, is republished under **No. 72A** in the second table of analyses at the end of this Chapter.

Turkey Gap Coal & Coke Co., Mine No. 1—No. 73 on Map II.

On the east side of Righthand Fork of Widemouth Creek, 1.0 mile north of Wenonah; **No. 3 Pocahontas Coal;** elevation, 2590′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Bone	0	3		
Coal (to slate floor)	2	10	4	3

Solvay Collieries Company Mine—No. 74 on Map II.

On south side of hollow and 0.5 mile north of Dott; **No. 3 Pocahontas Coal;** elevation, 2625′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	3″		
Bone	0	3		
Coal (to slate floor)	3	0	4	6

Ennis Coal Company, Hiawatha Mine—No. 75 on Map II.

On the east side of Righthand Fork of Widemouth Creek at Hiawatha; **No. 3 Pocahontas Coal;** elevation, 2550′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0½″		
Sulphur band	0	1		
Coal	0	6		
Bone	0	3		
Coal (to slate floor)	2	6½	4	5

The analysis published in Bulletin 2, page 214, under No. 49, from the U. S. Geological Survey, is republished under **No. 75** in the second table of analyses at the end of this Chapter.

Smokeless Coal & Coke Co. Mine—No. 76 on Map II.

On Big Branch of Righthand Fork of Widemouth Creek at Smokeless; **No. 3 Pocahontas Coal;** elevation, 2590′ B.; butts, N. 30° W.; faces, N. 60°E.; men employed, 61; daily capacity, 250 tons; shipped East and West; mine leased from Pocahontas Coal & Coke Co.; electric haulage; P. L. Vest, authority for data; section by Teets.

			Ft.	In.
Coal (with draw slate roof)	0′	1″		
Coal	1	2		
Slate	0	4		
Coal (to slate floor)	3	3	4	10

The composition of a sample of coal from this mine, No. 11, in Bulletin 2, pages 216 and 218, W. Va. Geological Survey Reports, is republished under **No. 76** in the first table of analyses at the end of this Chapter.

Coal Exposure—No. 664 on Map II.

In county road, just south of Giatto; **No. 3 Pocahontas Coal**; elevation, 2510′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	1″		
Bone	0	4		
Coal (to slate floor)	3	1	4	6

Thomas Coal Company Mine—No. 77 on Map II.

On the west side of Lefthand Fork of Widemouth Creek, 1.1 miles northwest of Giatto; **No. 3 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 30° W.; faces, N. 60° E.; men employed, 125; daily output, 400 tons; shipped East and West; used by the Norfolk & Western Railway Co.; electric haulage; G. W. Logan, Foreman, authority for data; section by Teets.

			Ft.	In.
Draw slate			0	4
Coal	1′	2 ″		
Bone	0	2½		
Coal	2	3		
Sulphur band	0	1½		
Coal (to slate floor)	0	9	4	6

Weyanoke Coal & Coke Co. Mine—No. 78 on Map II.

On the north side of Lefthand Fork of Widemouth Creek, at Weyanoke; **No. 3 Pocahontas Coal**; elevation, 2481.7′ L.; butts, N. 28° W.; faces, N. 62° E.; men employed, 265; daily output, 400 tons; shipped East and West, for domestic and steam use; electric haulage; R. D. Patterson, General Manager, authority for data; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Bone	0	3		
Coal (to slate floor)	3	1	4	6

The analysis of the coal from this mine, No. 10 on page 217, of Bulletin 2 of the Survey Reports, is republished under **No. 78** in the first table of analyses at the end of this Chapter. The coal was also sampled by the U. S. Bureau of Mines, the analyses given on pages 126 and 376 of Bulletin 85 being also republished under **No. 78** in the second table of analyses at the end of this Chapter.

Wm. McComas Opening—No. 665 on Map II.

2.5 miles northeast of Matoaka; **No. 3 Pocahontas Coal**; elevation, 2650′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	10″		
Bone	0	3		
Coal	0	7		
Sulphur band	0	1		
Coal (to slate floor)	2	4	4	1

Western Pocahontas Coal Co.—No. 666 on Map II.

2.6 miles northeast of Matoaka; **No. 3 Pocahontas Coal**; elevation, 2620′ B.; butts, N. 46° W.; faces, N. 44° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	1″		
Coal	1	0		
Slate	0	2		
Coal	0	6		
Bone	0	3		
Coal (to slate floor)	2	8	4	8

Solvay Collieries Co. Opening—No. 667 on Map II.

1.5 miles east of Springton; **No. 3 Pocahontas Coal**; elevation, 2655′ B.; butts, N. 43° W.; faces, N. 47° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	3″		
Bone	0	4		
Coal (to slate floor)	2	9	4	4

Solvay Collieries Co. Opening—No. 668 on Map II

1.5 miles northeast of Springton; **No. 3 Pocahontas Coal**; elevation, 2665′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Bone	0	4		
Coal (to slate floor)	2	8	4	2

Western Pocahontas Coal Co. Prospect—No. 669 on Map II.

On branch of Rich Creek, 2.5 miles northeast of Sand Gap School; **No. 3 Pocahontas Coal**; elevation, 2765′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal	0′	9″		
Bone	0	6		
Coal	0	8		
Bone	0	2		
Coal (to slate floor)	2	2	4	3

Moore and McLanahan Opening—No. 670 on Map II.

On Camp Creek, 1.0 mile southeast of Barn; **No. 3 Pocahontas Coal**; elevation, 2540′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	6″		
Bone	0	1		
Coal (to slate floor)	0	8	3	3

American Coal Company Mine—No. 79 on Map II.

On a righthand fork of Crane Creek, 1.1 miles northeast of McComas; **No. 3 Pocahontas Coal**; elevation, 2440′ B.; butts, N. 27° W.; faces, N. 63° E.; section by Teets.

			Ft.	In.
Draw slate			0	8
Coal	0′	11″		
Bone	0	6		
Coal (to slate floor)	3	1	4	6

Thomas Coal Co., Mine No. 1—No. 80 on Map II.

Near the head of a righthand fork of Crane Creek, 1.3 miles north of McComas; **No. 3 Pocahontas Coal**; elevation, 2435′ B.; butts, N. 28° W.; faces, N. 62° E.; men employed, 275; daily output, coal, 1350 tons; coke, 2500 tons; coal and coke shipped mostly West; electric haulage; W. J. Prichard, Supt., authority for data.

			Ft.	In.
Draw slate			0	6
Coal	0′	11″		
Bone	0	2		
Coal	3	6		
Bone	0	2		
Coal (to slate floor)	0	8	5	5

Sagamore Colliery Co., Mine No. 1—No. 81 on Map II.

On the south side of Tolliver Branch of Crane Creek, 0.7 mile south of Mannering; **No. 3 Pocahontas Coal**; elevation, 2380′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0″		
Bone	0	2		
Coal (to slate floor)	3	4	4	6

Sections and analyses of the coal from this mine are published in Bulletin 85, pages 125 and 374, of the U. S. Bureau of Mines, and the analyses are republished under **No. 81** in the second table of analyses at the end of this Chapter.

Sagamore Colliery Co., Mine No. 2—No. 82 on Map II.

On the north side of Tolliver Branch of Crane Creek, 0.5 mile south of Mannering; **No. 3 Pocahontas Coal**; elevation, 2380′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0″		
Bone	0	2		
Coal (to slate floor)	3	3	4	5

The analysis of a sample collected by the U. S. Bureau of Mines from the above mine, as published in Bulletin 85, pages 125 and 375, is republished under **No. 82** in the second table of analyses at the end of this Chapter.

Crane Creek Coal & Coke Co. Mine—No. 83 on Map II.

On the north side of Crane Creek, 0.5 mile east of Mannering; **No. 3 Pocahontas Coal**; elevation, 2385′ B.; butts, N. 29° W.; faces, N. 61° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	1″		
Bone	0	3		
Coal (to slate floor)	3	2	4	6

Sections and analyses of the coal from mines Nos. 1 and 2 are published in Bulletin 22, pages 276 and 1026, and Bulletin 85, pages 124-5 and 372, of the U. S. Bureau of Mines, the analyses being republished under **No. 83** in the second table at the end of this Chapter.

Pocahontas Consolidated Coal Co.—No. 671 on Map II.

On the south side of Little Fork of Elkhorn Creek, 1.5 miles east of Maybeury; just east of the Mercer-McDowell County Line; **No. 3 Pocahontas Coal**; elevation, 2350′ B.; butts, N. 33° W.; faces, N. 57° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0 ″		
Sulphur band	0	0½		
Coal	2	10		
Bone	0	2½		
Coal	3	8½		
Sulphur band	0	0½		
Coal (to slate floor)	0	8	8	6

Coal Exposure—No. 672 on Map II.

On the head of Elkhorn Creek at Coaldale; **No. 3 Pocahontas Coal**; elevation, 2380′ L.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with shale roof)	1′	1″		
Sulphur band	0	1		
Coal	3	0		
Bone	0	4		
Coal	3	0		
Bone	0	1		
Coal (to slate floor)	1	11	9	6

Buckeye Coal & Coke Co. Mine—No. 84 on Map II.

In Buckeye Hollow of Simmons Creek, 1.6 miles northwest of Simmons; **No. 3 Pocahontas Coal**; elevation, 2415′ B.; butts, N. 48° W.; faces, N. 42° E.; men employed, 140; daily output, 750 tons; used for domestic and steam purposes and shipped East and West; W. R. Forster, Asst. Foreman, authority for data; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	4″		
Bone and sulphur	0	5		
Coal (to slate floor)	3	4	6	1

The composition of a sample from this mine, No. 36 on page 212, of Bulletin 2, of the Survey Reports, is republished under **No. 84** in the first table of analyses at the end of this Chapter. Sections and analyses (No. 5 in Bulletin 2, page 213) of the coal from this mine are also published in Bulletin 22, pages 277 and 1028, of the U. S. Bureau of Mines, and the

analyses are republished under **No. 84** in the second table at the end of this Chapter.

Booth-Bowen Coal & Coke Co. Mine—No. 85 on Map II.

Near the head of Simmons Creek, 2.3 miles northwest of Simmons; **No. 3 Pocahontas Coal;** elevation, 2372′ L.; butts, N. 31° W.; faces, N. 59° E.; men employed, 175 to 200; daily output, 1000 tons; shipped abroad; J. H. Bowen, Superintendent, authority for data; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	5 ″		
Bone	0	4½		
Coal (to slate floor)	3	3½	6	1

The composition of a sample from this mine, No. 35 on page 212 of Bulletin 2, of the Survey Reports, is republished under **No. 85** in the first table of analyses at the end of this Chapter. Sections and analyses (Nos. 3 and 4 in Bulletin 2, page 213) of the coal from this mine are also published in Bulletin 22, pages 277 and 1029, of the U. S. Bureau of Mines, and the analyses are republished under **No. 85** in the second table of analyses at the end of this Chapter.

Caswell Creek Colliery Co. Mine—No. 86 on Map II.

On a branch of Simmons Creek, near head, 1.8 miles northwest of Simmons; **No. 3 Pocahontas Coal;** elevation, 2395′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	3″		
Bone	0	4		
Coal (to slate floor)	3	5	6	0

The composition of a sample from this mine, No. 37 on page 212, of Bulletin 2, of Survey Reports, is republished under **No. 86** in the first table of analyses at the end of this Chapter.

The analyses, published under Nos. 6 and 7 in Bulletin 2, page 213, of the West Virginia Geological Survey, made by the U. S. Geological Survey, are republished under **No. 86** in the second table of analyses at the end of this Chapter.

Thomas D. Lee Coal Co., Mine—No. 87 on Map II.

Along county road, 0.5 mile north of Simmons; **No. 3 Pocahontas Coal**; elevation, 2560′ B.; butts, N. 32° W.; faces, N. 58° E.; section by Teets.

			Ft.	In.
1.	**Coal** (with shale roof)	3′ 2″		
2.	Bone	0 4		
3.	**Coal**	1 4		
4.	Sulphur band	0 1		
5.	**Coal** (to slate floor)	1 2	6	1

The analysis of a sample (296-T) collected from Nos. 1, 3 and 5 of above section, as reported by Messrs. Hite and Krak, is published under **No. 87** in the first table of analyses at the end of this Chapter.

Coal Prospect—No. 673 on Map II.

On the head of Rich Creek, 2.3 miles just northeast of Wenonah; **No. 3 Pocahontas Coal**; elevation, 2645′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

		Ft.	In.
Slate		0	10
Bone	0′ 6″		
Coal	1 6		
Slate	0 1		
Coal (to slate floor)	1 3	3	4

Western Pocahontas Coal Co. Prospect—No. 674 on Map II.

On the head of a branch of Rich Creek, 2.2 miles northwest of Willis White School and 1.7 miles southeast of the common corner of Raleigh-Wyoming-Mercer County Line; **No. 3 Pocahontas Coal**; elevation, 2760′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

		Ft.	In.
Coal (with slate roof)	1′ 11″		
Bone	0 2		
Coal (to slate floor)	1 8	3	9

Coal Exposure—No. 675 on Map II.

On a ridge one mile west of Willis White School, and 1.0 mile northeast of Pinoak School; **No. 3 Pocahontas Coal**; elevation, 2715′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)	3	0

Harrah Local Mine—No. 676 on Map II.

On ridge, one mile northwest of the Willis White School; **No. 3 Pocahontas Coal**; elevation, 2710′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	0″		
Bone	0	3		
Coal (to slate floor)	1	8	3	11

R. P. Walker Opening—No. 680 on Map II.

On ridge, 2.2 miles east of Springton; **No. 3 Pocahontas Coal**; elevation, 2720′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	3″		
Bone	0	4		
Coal (to slate floor)	2	10	4	5

Buckeye Coal & Coke Co. Opening—No. 681 on Map II.

On head of branch of Bluestone River, 0.6 mile southwest of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 27° W.; faces, N. 63° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	5″		
Bone	0	4		
Coal (to slate floor)	2	7	5	4

Coal Exposure—No. 682 on Map II.

In county road, 0.7 mile southeast of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2620′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with slate roof and floor)	5	0

Buckeye Coal & Coke Co. Opening—No. 683 on Map II.

On the south side of Flipping Creek, 0.4 mile south of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2515′ B.; butts, N. 30° E.; faces, N. 60° W.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	4″		
Bone	0	4		
Coal (to slate floor)	2	6	5	2

Louisville Coal & Coke Co., Mine No. 2—No. 88 on Map II.

On the head of Flipping Creek, 0.8 mile northwest of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2425′ L.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Bone	0	2		
Coal	3	10		
Slate	0	2		
Coal	0	2		
Slate	0	7		
Coal (to slate floor)	0	4	6	5

The composition of the coal, Nos. 56 and 57 on page 216 of Bulletin 2 of the Survey Reports, is republished under **No. 88** in the second table of analyses at the end of this Chapter. Sections and analyses of the coal from the above mine are also published in Bulletin 22, pages 275 and 1024, and Bulletin 85, pages 123 and 370, of the U. S. Bureau of Mines, and the analyses are republished under **No. 88** in the second table of analyses.

Louisville Coal & Coke Co., Mine No. 3—No. 89 on Map II.

On the head of Flipping Creek, 1.1 miles northwest of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2420′ L.; butts, N. 27° W.; faces, N. 63° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Bone	0	2		
Coal (to slate floor)	3	2	4	6

The analysis of a sample from the above mine, No. 58 on page 216, of Bulletin 2 of the Survey Reports, is republished under **No. 89** in the first table of analyses at the end of this Chapter. Sections and analyses of the coal from this mine are also published in Bulletin 22, pages 275 and 1024, and Bulletin 85, pages 123 and 370, of the U. S. Bureau of Mines, and the analyses are republished under **No. 89** in the second table of analyses.

Louisville Coal & Coke Co. Mine (old)—No. 684 on Map II.

On Flipping Creek, just above Goodwill; **No. 3 Pocahontas Coal**; elevation, 2460′ B.; butts, N. 29° W.; faces, N. 61° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	1″		
Bone	0	3		
Coal (to slate floor)	3	3	4	7

Louisville Coal and Coke Co., Mine No. 1—No. 90 on Map II.

On a righthand fork of Flipping Creek, 0.7 mile north of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2410′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0″		
Bone	0	3		
Coal (to slate floor)	3	7	4	10

The composition of a sample of coal from this mine, No. 31 on page 212 of Bulletin 2 of the Survey Reports, is republished under **No. 90** in the first table of analyses at the end of this Chapter.

The coal from this mine was also sampled by the U. S. Bureau of Mines and the results, as given in Bulletin 85, pages 123 and 370, are republished under **No. 90** in the second table of analyses.

Coal Prospect—No. 685 on Map II.

On the east side of Crane Creek, just east of the mouth of Upper Georges Branch; **No. 3 Pocahontas Coal**; elevation, 2435′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	1 ″		
Bone	0	1½		
Coal	0	2		
Bone	0	3		
Coal (to slate floor)	2	9½	4	5

PLATE XXVII.—No. 3 Pocahontas Coal in railroad grade just north of Rodes on Piney Creek.

Crystal Coal & Coke Co., Mine No. 1—No. 91 on Map II.

On the east side of Crane Creek, 0.4 mile up hollow opposite mouth of Upper Georges Branch; **No. 3 Pocahontas Coal**; elevation, 2445′ B.; butts, N. 30° E.; faces, N. 60° W.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0″		
Bone	0	2		
Coal (to slate floor)	3	1	4	3

Crystal Coal & Coke Co., Mine No. 2—No. 92 on Map II.

On Belcher Branch of Crane Creek, one mile northeast of Crystal; **No. 3 Pocahontas Coal**; elevation, 2490′ B.; butts, N. 30° W.; faces, N. 60° E.; men employed, 286; daily output, 1200 to 1300 tons; shipped East and West and used for domestic purposes; electric haulage; authority for data, Book-keeper; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	6″		
Bone	0	3		
Coal (to slate floor)	2	1	3	10

Godfrey Coal Company Mine—No. 93 on Map II.

On the east side of Crane Creek at Godfrey; **No. 3 Pocahontas Coal**; elevation, 2535′ B.; butts, N. 29° W.; faces, N. 61° E.; employs 30 men; H. A. Ritz, President, Bluefield, W. Va.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	5″		
Bone	0	4		
Coal (to slate floor)	2	2	3	11

The coal from the above mine was sampled by the U. S. Bureau of Mines and the results, as published in Bulletin 85, pages 122 and 368, are republished under **No. 93** in the second table of analyses at the end of this Chapter.

Gus Bond Opening—No. 686 on Map II.

On a branch of Lower Georges Branch of Crane Creek, 0.5 mile southwest of Godfrey; **No. 3 Pocahontas Coal**; elevation, 2490′ B.; butts, N. 24° W.; faces, N. 66° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	7″		
Bone	0	4		
Coal (to slate floor)	2	1	4	0

Louisville Coal & Coke Co. Opening—No. 687 on Map II.

On the head of Jims Branch of Crane Creek, 0.9 mile southwest of Godfrey; **No. 3 Pocahontas Coal**; elevation, 2560′ B.; butts, N. 26° W.; faces, N. 64° E.; leased from Pocahontas Consolidated Coal Co.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	6″		
Bone	0	3		
Coal (to slate floor)	2	2	3	11

Culba Severt Opening—No. 688 on Map II.

On the west side of Crane Creek, 0.9 mile south of Godfrey; **No. 3 Pocahontas Coal**; elevation, 2590′ B.; butts, N. 26° W.; faces, N. 64° E.; coal leased from the Louisville Coal & Coke Co. by Mr. Severt who mines and sells about 80 tons annually for local fuel; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	3″		
Sulphur band	0	1		
Coal	0	8		
Bone	0	4		
Coal (to slate floor)	2	7	4	11

Cyrus Bailey Opening—No. 689 on Map II.

On the east side of Flipping Creek, 0.5 mile east of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 26° W.; faces, N. 64° E.; about 250 tons mined annually for local fuel by Mr. Bailey, who leases from the Louisville Coal & Coke Co., sub-lessee from the Pocahontas Consolidated Coal Co.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2 ″		
Sulphur	0	1½		
Coal	0	8½		
Bone	0	4		
Coal (to slate floor)	2	6	4	10

J. M. Gearhart Opening—No. 690 on Map II.

On the east side of Flipping Creek, 0.7 mile north of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2440′ B.; about 135 tons mined annually by Mr. Gearhart for domestic fuel; leased from Louisville Coal & Coke Co.; butts, N. 27° W.; faces, N. 63° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	2″		
Sulphur band	0	1		
Coal (to slate floor)	3	4	4	7

Coal Exposure—No. 691 on Map II.

On county road, 0.6 mile east of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2620′ B.; section by Teets.

	Ft.	In.
Coal, weathered (with slate roof and floor).....	4	2

Here the coal passes above the hills and disappears.

Coal Exposure—No. 692 on Map II.

On the south side of Widemouth Creek at Matoaka; **No. 3 Pocahontas Coal**; elevation, 2560′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof).....	1′	0″		
Sulphur band.....	0	1		
Coal	0	7		
Bone	0	3		
Coal (to slate floor).....	2	4	4	3

Coal Exposure—No. 693 on Map II.

On the Lefthand Fork of Mill Creek, 0.6 mile south of Ruth; **No. 3 Pocahontas Coal**; elevation, 2440′ B.; butts, N. 28° W.; faces, N. 62° E.; section by Teets.

			Ft.	In.
Coal (with slate roof).....	0′	11″		
Sulphur band.....	0	1		
Coal	2	6		
Bone	0	2		
Coal	5	1		
Sulphur band.....	0	1		
Coal (to slate floor).....	0	10	9	8

Coal Exposure—No. 694 on Map II.

On the head of the Lefthand Fork of Mill Creek, 0.7 mile southwest of Ruth; **No. 3 Pocahontas Coal**; elevation, 2445′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof).....	0′	10″		
Sulphur band.....	0	1		
Coal	2	7		
Bone	0	3		
Coal	5	0		
Sulphur band.....	0	1		
Coal (to slate floor).....	1	0	9	10

George Bell Opening—No. 695 on Map II.

On the east side of Bluestone River, 0.5 mile southeast of Coopers; **No. 3 Pocahontas Coal**; elevation, 2570′ B.; butts, N. 29° W.; faces, N. 61° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	4′	2″		
Bone	0	2		
Coal	1	8		
Bone	0	1		
Coal	1	0		
Bone	0	1		
Coal, visible	0	8	7	10

George Bell Opening—No. 696 on Map II.

On the east side of Bluestone River, 0.5 mile southeast of Coopers; **No. 3 Pocahontas Coal**; elevation, 2530′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	3′	11″		
Coal, bony	0	3		
Coal	1	9		
Bone	0	2		
Coal	1	3		
Bony coal	0	2		
Coal, visible	1	4	8	10

John Glass Opening—No. 697 on Map II.

Near the head of Flipping Creek, 0.8 mile northwest of Goodwill; **No. 3 Pocahontas Coal**; elevation, 2420′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	1″		
Bone	0	1		
Coal	0	11		
Bone	0	1		
Coal (to slate floor)	2	2	4	4

Pawama Coal Company Mine—No. 94 on Map II.

On the head of a western branch of Widemouth Creek, one mile southwest of Matoaka; **No. 3 Pocahontas Coal**; elevation, 2545′ B.; butts, N. 30° E.; faces, N. 60° W.; men employed, 105; capacity, 400 tons; Mine Superintendent, J. C. Straus, Matoaka, W. Va.; section by Teets.

			Ft.	In.
Coal (with slate roof)	1′	0″		
Bone	0	1		
Coal	0	11		
Bone	0	1		
Coal (to slate floor)	2	5	4	6

Sections and analyses of the coal from this mine are published in Bulletin 85, pages 123, 124, and 371, of the U. S. Bureau of Mines, and these analyses with those published under No. 9 in Bulletin 2, page 217, of the W. Va. Geological Survey, are republished under **No. 94** in the tables at the end of this Chapter.

Pawama Coal Company Prospect—No. 698 on Map II.

Near the head of Godfrey Branch of Bluestone River, 1.2 miles south of Matoaka; **No. 3 Pocahontas Coal**; elevation, 2570′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal	0′	11 ″		
Bone	0	1½		
Coal	0	10½		
Bone	0	1		
Coal (to slate floor)	2	5	4	5

Jumping Branch District, Mercer County.

No commercial mines in the No. 3 Pocahontas Coal are opened in Jumping Branch District. Several tests have been made in the crop and several exposures were measured along the roads and streams. But in general, the No. 3 Pocahontas Coal is much thinner here than in Rock District.

Moore & McClanhan Prospect—No. 699 on Map II.

On north side of Camp Creek, 1.3 miles southeast of Barn; **No. 3 Pocahontas Coal**; elevation, 2630′ B.; butts, N. 30° W.; faces, N. 60° E.; driven in 15 feet; section by Krebs.

	Ft.	In.
Dark shale (with sandstone cover)	2	0
Coal, soft (to light shale floor)	2	10

Joseph Mills Local Fuel Opening—No. 700 on Map II.

In the head of Miller Hollow of Mash Fork of Camp Creek, 1.0 mile south of Egeria; **No. 3 Pocahontas Coal**; elevation, 2665′ B.; butts, N. 21° W.; faces, N. 69° E.; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	5″		
Bone	0	1		
Coal (to gray shale floor)	2	2	2	8

Moore & McClanhan Prospect—No. 701 on Map II.

On Camp Creek, 1.0 mile southeast of Barn; **No. 3 Pocahontas Coal**; elevation, 2540′ B.; butts, N. 20° W.; faces, N. 70° E.; section by Teets.

			Ft.	In.
Coal (with slate roof)	2′	6″		
Bone	0	1		
Coal (to slate floor)	0	8	3	3

Moore & McClanhan Prospect—No. 702 on Map II.

On Camp Creek, 1.5 miles southeast of Barn; **No. 3 Pocahontas Coal**; elevation, 2625′ B.; butts, N. 10° E.; faces, N. 80° W.; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	2 ″		
Slate	0	0½		
Coal	2	6		
Bone	0	2		
Coal (to slate floor)	0	1½	3	0

Coal Exposure—No. 703 on Map II.

In county road, 0.7 mile south of Fairview School; **No. 3 Pocahontas Coal**; elevation, 2780′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and fire clay floor)	1	6

Ed. Lilly Prospect—No. 704 on Map II.

On west side of road leading to Bear Creek, 0.5 mile southwest of Fairview School; **No. 3 Pocahontas Coal**; elevation, 2750′ B.; section by Krebs.

			Ft.	In.
Dark shale (with sandstone cover)			1	0
Coal, soft	1′	6″		
Concealed by water	1	0	2	6

Coal Exposure—No. 705 on Map II.

On east side of Mill Branch of Camp Creek, 2.1 miles east of Barn; **No. 3 Pocahontas Coal**; elevation, 2590′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal, soft, visible (with shale roof).....	2	8

Jumping Branch District, Summers County.

Very little prospecting has been done for the No. 3 Pocahontas Coal in Summers County. However, several openings were found in this bed.

Coal Exposure—No. 706 on Map II.

On Spicelick Creek of Little Bluestone River, 1.0 mile east of Mountview; **No. 3 Pocahontas Coal**; elevation, 2850′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, soft (with dark shale roof)	0′	4″		
Bone	0	4		
Coal, soft, visible.....	2	0		
Concealed by water.....	1	0	3	8

Harmon Plumley Prospect—No. 707 on Map II.

On Freezeland Mountain, 500 feet northwest of Harmon Plumley's house, 0.6 mile southwest of Dick Richmond School; **No. 3 Pocahontas Coal**; elevation, 3255′ B.; section by Krebs.

			Ft.	In.
Shale, dark (with friable sandstone cover).....			7	0
Coal, soft.....	0′	4″		
Bone	0	1		
Coal, reported.....	3	8	4	1

Another opening about 0.3 mile west was measured by Krebs, as follows:

Plumley Heirs Prospect—No. 708 on Map II.

On south side of Freezeland Mountain; **No. 3 Pocahontas Coal**; elevation, 3260′ B; faces, north; butts, west.

		Ft.	In.
Coal, impure (with sandstone roof)	0′ 2″		
Coal, soft	0 4		
Bone	0 1		
Coal, soft	2 6		
Bone	0 1		
Coal, soft (to slate floor)	0 6	3	8

Coal Exposure—No. 709 on Map II.

On east side of Whiteoak Mountain, on side of road leading to Jumping Branch, 1.8 miles northwest of Jumping Branch; elevation, 3050′ B.; section by Krebs.

	Ft.	In.
Coal, soft (with sandstone roof and slate floor)	3	0

COKE FROM NO. 3 POCAHONTAS COAL.

The following analyses of **Coke** from No. 3 Pocahontas Coal in Mercer County are taken from the table of analyses on pages 219-221 of Bulletin 2 of the West Virginia Geological Survey:

Coke from No. 3 Pocahontas Coal.

Analyses Nos.	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Phosphorus	Coking Time
18	0.08	1.05	88.00	10.87	0.54	0.007	48 hrs.
23	0.07	0.89	92.38	6.66	0.67	0.0025	48 hrs.
28	0.12	1.29	92.38	6.21	0.60	0.0065	48 hrs.
29	0.15	1.13	88.00	10.72	0.60	0.0055	48 hrs.
30	0.10	1.21	91.92	6.77	0.58	0.005	48 hrs.
31	0.05	0.69	92.66	6.60	0.68	0.004	48 hrs.
Average	0.10	1.04	90.89	7.97	0.61	0.005	48 hrs.

Location of Samples.

18.—From Louisville Coal & Coke Co. Ovens, Goodwill.
23.—From Buckeye Coal & Coke Co. Ovens, Buckeye Mine.
28.—From Coaldale Coal & Coke Co. Ovens, Coaldale.
29.—From Goodwill Coal & Coke Co. Ovens, Goodwill Mine.
30.—From Booth-Bowen Coal & Coke Co. Ovens, Simmons Creek.
31.—From Mill Creek Coal & Coke Co. Ovens, Ruth.

Quantity of No. 3 Pocahontas Coal Available.

Based on the evidence of the preceding pages and with a planimetric determination of the area from its outcrop on the map, the following estimate is made of the probable amount of No. 3 Pocahontas Coal. The amount already mined in Raleigh and Summers Counties is only a small part of the total and is disregarded in this estimate, while that mined in Rock District, Mercer County, will be deducted from the total in that county:

Probable Amount of No. 3 Pocahontas Coal.

Counties by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Raleigh:					
Town	3′ 6″	10	6,400	975,744,000	39,029,760
Trap Hill	3 6	22	14,080	2,146,636,800	85,865,472
Slab Fork	4 0	82	52,480	9,144,115,200	365,764,608
Shady Spring	3 0	34	21,760	2,843,596,800	113,743,872
Richmond	3 6	15	9,600	1,463,616,000	58,544,640
Totals	.....	163	104,320	16,573,708,800	662,948,352
Mercer:					
Rock	5′ 0″	48	30,720	6,690,816,000	267,632,640
Jumping Branch	3 0	12	7,680	1,003,622,400	40,144,896
Totals	.....	60	38,400	7,694,438,400	307,777,536
Summers:					
Jumping Branch	3′ 0″	4	2,520	329,313,600	13,092,544
Totals for 3 Counties	.....	227	145,240	24,597,460,800	983,818,432

THE NO. 2 POCAHONTAS COAL.

The No. 2 Pocahontas Coal is usually thin and impure in Raleigh County, but has some commercial value. A few sections will be given showing its thickness and structure.

Slab Fork District, Raleigh County.

The No. 2 Pocahontas Coal outcrops along the waters of Stonecoal and Tommy Creeks and Devils Fork in Slab Fork District, and is very persistent where the coal is exposed.

McCreery Brothers Opening—No. 710 on Map II.

On the north side of Stonecoal Creek, 2.4 miles northwest of Odd; **No. 2 Pocahontas Coal**; elevation, 1920′ B; butts, N. 23° W.; faces, N. 67° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, soft (with sandstone and sandy shale roof and slate floor)	2	10

The analysis of a sample (278-T) collected from the above mine, as reported by Messrs. Hite and Krak, is published under **No. 710** in the first table of analyses at the end of this Chapter.

Western Pocahontas Coal Co. Prospect—No. 711 on Map II.

On the south side of Devils Fork, 1.4 miles northeast of Basin; **No. 2 Pocahontas Coal**; elevation, 2135′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	0′	6″		
Slate, dark	0	1		
Coal, soft	0	11		
Slate, gray	0	4		
Coal, soft (to slate floor)	0	11	2	9

McCreery Brothers Prospect—No. 712 on Map II.

On the north side of Wiley Spring Branch of Bluff Fork, 1.9 miles northeast of Basin; **No. 2 Pocahontas Coal**; elevation, 2185′ B.; butts, N. 26° W.; faces, N. 64° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with gray shale roof)	0′	5″		
Bone	0	1		
Coal	1	0		
Slate	0	3		
Coal (to gray shale floor)	0	7	2	4

McCreery Brothers Prospect—No. 713 on Map II.

On the north side of Stonecoal Creek, 2.5 miles northwest of Odd; **No. 2 Pocahontas Coal**; elevation, 1910′ B.; butts, N. 22° W.; faces, N. 68° E.; greatest rise, southeast; section by Teets.

	Ft.	In.
Coal, soft (with shale roof and slate floor)	2	11

The analysis of a sample (280-T) collected from the above prospect, as reported by Messrs. Hite and Krak, is published under **No. 713** in the first table of analyses at the end of this Chapter.

Western Pocahontas Coal Co. Prospect—No. 714 on Map II.

In the bed of Devils Fork of Guyandot River, 2 miles southeast of Stonecoal Junction; **No. 2 Pocahontas Coal**; elevation, 1650′ B.; butts, N. 28° W.; faces, N. 62° E.; greatest rise, southeast; section by Teets.

				Ft.	In.
1.	**Coal** (with sandstone roof)	0′	7″		
2.	Bone	0	1		
3.	**Coal**	1	3		
4.	Slate, gray	0	1		
5.	**Coal** (to slate floor)	0	4	2	4

The analysis of a sample (289-T) collected from Nos. 1, 3 and 5 of above section, as reported by Messrs. Hite and Krak, is given in the first table of coal analyses at the end of this Chapter under **No. 714.**

McCreery Brothers Prospect—No. 715 on Map II.

On the north side of Bluff Fork of Devils Fork, 2.3 miles east of Basin; **No. 2 Pocahontas Coal**; elevation, 2420′ B.; butts, N. 34° W.; faces, N. 56° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with slate roof)	0′	7½″		
Bone	0	0¾		
Coal	1	2		
Slate, gray	0	2		
Coal	0	5		
Bone	0	1		
Coal (to gray shale floor)	0	9	3	3¼

Western Pocahontas Coal Co. Prospect—No. 716 on Map II.

On south side of Bluff Fork in south branch, 1.2 miles northeast of Basin; **No. 2 Pocahontas Coal**; elevation, 2145′ B.; butts, N. 30° W.; faces, N. 60° E.; greatest rise, southeast; section by Teets.

			Ft.	In.
Coal (with shale roof)	0′	5 ″		
Bone	0	1		
Coal	1	4½		
Slate, gray	0	1		
Coal (to slate floor)	0	7½	2	7

Rock District, Mercer County.

The No. 2 Pocahontas Coal is thin in Mercer County, and thus far has not been mined commercially.

Coal Exposure—No. 717 on Map II.

On north side of the Virginian Railway, 1.4 miles northwest of Giatto; **No. 2 Pocahontas Coal**; elevation, 2550′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

	Ft.	In.
Coal, soft (with sandstone roof and slate floor)	2	2

Coal Exposure—No. 718 on Map II.

In N. & W. Ry. cut, 0.7 mile southeast of Clarks Gap; **No. 2 Pocahontas Coal**; elevation, 2480′ L.; butts, N. 33° W.; faces, N. 57° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	9″		
Slate, gray	0	2		
Coal (to gray shale floor)	0	3	2	2

Coal Exposure—No. 719 on Map II.

In Virginian Railway cut, 1.2 miles southeast of Clarks Gap; **No. 2 Pocahontas Coal**; butts, N. 33° W.; faces, N. 57° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	10″		
Slate, gray	0	5		
Coal (to gray shale floor)	0	3	2	6

Coal Exposure—No. 720 on Map II.

In Virginian Railway cut, 1.5 miles southeast of Clarks Gap; **No. 2 Pocahontas Coal**; elevation, 2500′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	8″		
Slate, gray	0	4		
Coal (to gray shale floor)	0	3	2	3

Coal Exposure—No. 721 on Map II.

On the south side of a branch, 0.3 mile east of Springton; **No. 2 Pocahontas Coal**; elevation, 2565′ B.; butts, N. 32° W.; faces, N. 58° E.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor)	1	9

Coal Exposure—No. 722 on Map II.

Near the head of Big Branch of Righthand Fork of Widemouth Creek, at Widemouth P. O.; **No. 2 Pocahontas Coal**; elevation, 2470′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor)	2	2

Coal Exposure—No. 723 on Map II.

In Virginian Railway cut at Lowe; **No. 2 Pocahontas Coal**; elevation, 2425′ B.; butts, N. 33° W.; faces, N. 57° E.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	1′	11″		
Slate, gray	0	6		
Coal (to shale floor)	0	3	2	8

Coal Exposure—No. 724 on Map II.

In N. & W. Ry. cut, 1.0 mile northwest of Lowe; **No. 2 Pocahontas Coal**; elevation, 2415′ B.; section by Teets.

	Ft.	In.
Coal (with sandstone roof).....1′ 8″		
Slate, gray.....0 4		
Coal (to shale floor).....0 2	2	2

Coal Exposure—No. 725 on Map II.

In county road, at Pinoak School; **No. 2 Pocahontas Coal**; elevation, 2725′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and slate floor)....	1	6

Coal Exposure—No. 726 on Map II.

In N. & W. Ry. cut at Mora; **No. 2 Pocahontas Coal**; elevation, 2323′ L.; butts, N. 30° W.; faces, N. 60° E.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and shale floor).....	2	0

Coal Exposure—No. 727 on Map II.

In county road at forks of Mill Creek, 0.5 mile northwest of Coopers; **No. 2 Pocahontas Coal**; elevation, 2395′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and slate and fire clay floor)	1	9

Coal Exposure—No. 728 on Map II.

In county road just west of Bramwell; **No. 2 Pocahontas Coal**; elevation, 2470′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandstone and shale roof and slate floor).....	0	10

James Bell Opening—No. 729 on Map II.

On the east side of Bluestone River, 0.3 mile southeast of Bramwell; **No. 2 Pocahontas Coal**; elevation, 2530′ B.; section by Teets.

	Ft.	In.
Coal (with sandstone roof)....0′ 10 ″		
Slate, gray.....0 5½		
Coal (to slate floor).....1 4½	2	8

Old Opening—No. 730 on Map II.

On the east side of Bluestone River at Coopers; **No 2. Pocahontas Coal**; elevation, 2410′ B.; section by Teets.

			Ft.	In.
Slate (with massive sandstone cover)			1	1
Coal	0′	10 ″		
Shale, gray	0	5½		
Coal	1	4		
Shale, gray	0	2½		
Coal	0	2		
Shale, gray	2	0		
Coal (to gray shale floor)	0	2	5	2

James Gerhard Local Mine—No. 731 on Map II.

On ridge between Bluestone River and Flipping Creek, 0.6 mile east of Goodwill; **No. 2 Pocahontas Coal**; elevation, 2500′ B.; section by Krebs.

				Ft.	In.
1. **Coal**, soft (with dark shale roof)	0′	8″			
2. Slate	0	1			
3. **Coal**, soft (to slate floor)	1	6		2	3

The analysis of a sample (496-K) collected from the above mine, as reported by Messrs. Hite and Krak, is published under **No. 731** in the first table at the end of this Chapter.

Coal Exposure—No. 732 on Map II.

On side of Virginian Railway, 0.6 mile west of Giatto, **No. 2 Pocahontas Coal**; elevation, 2420′ B.; section by Krebs.

			Ft.	In.
Coal, soft (with sandstone roof)	2′	0″		
Slate	0	8		
Coal, soft (to slate floor)	0	2	2	10

A. D. Harrah Prospect—No. 733 on Map II.

On waters of Lefthand Fork of Mash Fork of Camp Creek, 0.6 mile north of Willis White School; **No. 2 Pocahontas Coal**; elevation, 2630′ B.; butts, N. 30° W.; faces, N. 60° E.; section by Krebs.

			Ft.	In.
Coal, soft (with slate roof)	0′	9″		
Slate	0	1		
Coal, soft (to slate floor)	2	2	3	0

A. D. Harrah Prospect—No. 734 on Map II.

On north side of Lefthand Fork of Mash Fork of Camp Creek, 1.3 miles north of Willis White School; **No. 2 Pocahontas Coal**; elevation, 2645′ B.; butts, N. 40° W.; faces, N. 50° E.; section by Krebs.

	Ft.	In.
Coal, soft (with slate roof and floor)	3	6

Jumping Branch District, Mercer County.

Very little prospecting has been done in the No. 2 Pocahontas Coal seam in Jumping Branch District.

Coal Exposure—No. 735 on Map II.

In county road, 0.2 mile northwest of Fairwind School; **No. 2 Pocahontas Coal**; elevation, 2650′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and fire clay floor)	0	8

Summers County.

The No. 2 Pocahontas Coal is thin and impure in Summers County, as shown in the sections already given on preceding pages of this Report.

Quantity of No. 2 Pocahontas Coal Available.

Based on the evidence of the preceding pages, and on an areal determination by Teets, the following estimate is made of the probable amount of No. 2 Pocahontas Coal for Slab Fork District, Raleigh County, and Rock District, Mercer County:

Probable Amount of No. 2 Pocahontas Coal.

Counties by Districts.	Thickness of Coal Assumed.	Sq. Mi.	Acres	Cubic Feet of Coal.	Short Tons of Coal.
Raleigh:					
Slab Fork	2′ 0″	62	39,680	3,456,921,600	138,276,864
Mercer:					
Rock	2 6	52	33,280	3,624,192,000	144,967,680
Totals	.....	114	72,960	7,081,113,600	283,244,544

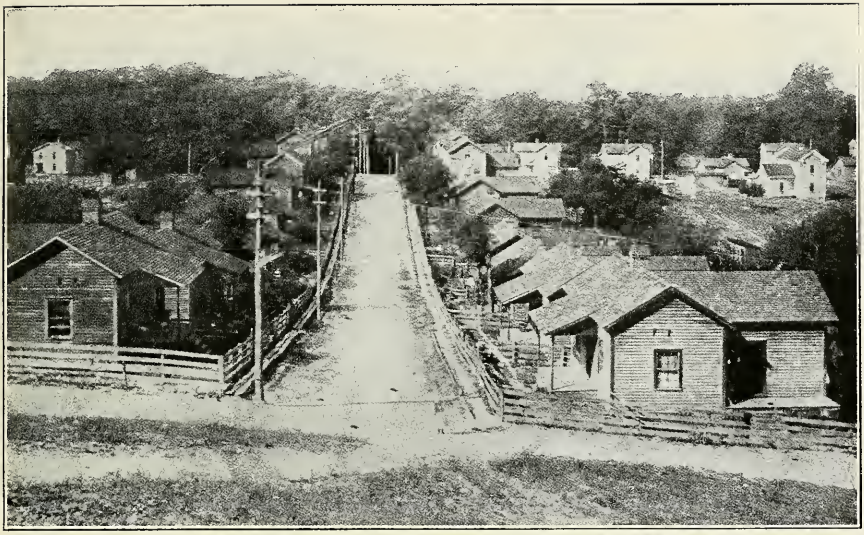

PLATE XXVIII(a).—View of Eccles.

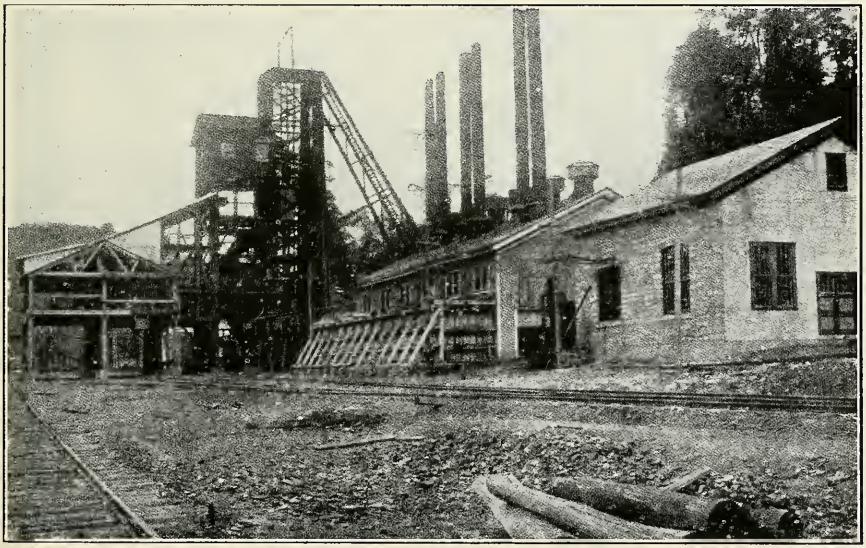

PLATE XXVIII(b).—Mines Nos. 1 and 2 of New River Collieries Co. at Eccles.

THE NO. 1 POCAHONTAS COAL.

The No. 1 Pocahontas Coal is thin and impure in the Raleigh-Summers-Mercer Area. In addition to the thicknesses of this coal given in the general sections, a few more sections will be given, as follows:

Rock District, Mercer County.

Coal Exposure—No. 736 on Map II.

In a Virginian Railway cut near Lowe; **No. 1 Pocahontas Coal**; elevation, 2465′ B.; section by Teets.

	Ft.	In.
Coal (with shale roof and slate floor).....	0	11

Coal Exposure—No. 737 on Map II.

In a Norfolk & Western Ry. cut, 1.0 mile northeast of Sylvia; **No. 1 Pocahontas Coal**; elevation, 2420′ B.; section by Teets.

	Ft.	In.
Coal (with slate roof and fire clay and slate floor)	0	6

Coal Exposure—No. 738 on Map II.

In Virginian Railway cut, at Giatto; **No. 1 Pocahontas Coal**; elevation, 2400′ B.; butts, N. 32° W.; faces, N. 58° E.; section by Teets.

	Ft.	In.
Coal (with sandstone roof and slate floor).....	0	10

Coal Exposure—No. 739 on Map II.

In county road just southeast of Pinoak School; **No. 1 Pocahontas Coal**; elevation, 2965′ B.; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and floor).....	1	1

Coal Exposure—No. 740 on Map II.

In county road at forks of Mill Creek, 0.5 mile northwest of Coopers; **No. 1 Pocahontas Coal**; elevation, 2340′ B; section by Teets.

	Ft.	In.
Coal, impure (with shale roof and shale and fire clay floor).....	0	4

Coal Exposure—No. 741 on Map II.

In county road, just west of Bramwell; **No. 1 Pocahontas Coal**; elevation, 2400′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate floor)	0	4

Washington Huffman Opening—No. 742 on Map II.

On the head of a branch of Godfrey Branch of Widemouth Creek, 2.1 miles south of Montcalm; **No. 1 Pocahontas Coal**; elevation, 2510′ B.; butts, N. 30° E.; faces, N. 60° W.; section by Teets.

			Ft.	In.
Coal (with sandstone roof)	0′	5″		
Shale, gray	0	2		
Coal (to slate floor)	1	1	1	8

Coal Exposure—No. 743 on Map II.

In county road, 0.5 mile east of Matoaka; **No. 1 Pocahontas Coal**; elevation, 2590′ B.; section by Teets.

	Ft.	In.
Coal, impure (with sandy shale roof and slate and fire clay floor)	0	6

No estimate will be made of the amount of available coal in the No. 1 Pocahontas bed.

THE LANDGRAFF, KEYSTONE AND SIMMONS COALS.

The Landgraff, Keystone and Simmons Coals of Hennen, in McDowell County, were recognized in Mercer, but are thin and impure, as shown in the sections already given on preceding pages of this Report.

COALS IN THE MAUCH CHUNK BEDS.

A thin vein of coal from 160 to 200 feet under the base of the Pottsville Series was found on the head of Pinch Creek of Glade, where the coal has been dug from the creek on the land of A. Bragg, and the following section was measured:

Coal Exposure—No. 744 on Map II.

On Pinch Creek, 0.8 mile southeast of Pluto; elevation, 2490′ B.; section by Krebs.

	Ft.	In.
Red shale	10	0
Shale, green	0	2
Coal, hard, glossy (to dark slate floor)	0	8.

SUMMARY OF AVAILABLE COAL.

For convenience of reference, all the mines in the commercial seams described in this Chapter have been given serial numbers which are printed in blue on Map II, along with the mine symbols. The following table gives a list of these numbers, as well as a summary of the total amount of coal that each seam is estimated to contain:

Summary of Available Coal.

Coal Seam.	Mines and Prospects Listed on Map II and Described in Chapter VIII.	Short Tons.		
		Raleigh	Mercer	Summers
Middle and Lower Kittanning (No. 5 Block)	101—108	3,613,041		
Stockton-Lewiston	109—113	1,672,704		
Winifrede	1—4 & 114—135	15,979,898		
Hernshaw	137—141	7,471,410		
Cedar Grove	142—145	11,998,864		
Alma	5—6 & 145A—166	252,020,736		
Campbell Creek (No. 2 Gas)	167—211	272,985,293		
Powellton	212—221	55,768,800		
Eagle	222—293, 295—305 and 314	441,593,856		
Little Eagle	306—322	138,311,712		
Lower War Eagle	323—351	293,554,400		
Gilbert	354—366	30,108,672		
Sewell	7—26 & 384—406	558,683,136		
Beckley	27—61 & 417—458	880,957,440		
Fire Creek	62—66 & 459—534	334,540,800		
No. 8 Pocahontas	554—574	27,878,400	25,090,560	
No. 6 Pocahontas	67, 585—613	155,003,904	28,993,536	
No. 3 Pocahontas	68—94 & 632—709	662,948,352	307,777,536	13,092,544
No. 2 Pocahontas	710—735	138,276,864	144,967,685	
Totals		4,283,368,282	506,829,317	13,092,544
Total for the three Counties				4,803,290,143

This summary represents the amount of coal believed to have once been available for mining in the three counties. The Annual Report of the West Virginia Department of Mines for the year ending June 30th, 1914, shows that 65,517,464 long tons of coal have been mined in the three counties. If this be computed on a short ton basis (2,000 pounds), the total is 73,379,560 tons. For the year elapsing since this Report was completed, perhaps enough coal has been mined to make the total 80,000,000 short tons. The amount of coal unrecoverable in old pillars will probably bring the total to 100,000,000 short tons, the sum to be deducted from the figures given in the above summary. When this correction is made, the amount of coal still available for mining is **4,703,290,143 short tons.** Allowing an average recovery of 80 per cent., which is possible by modern mining methods, the probable amount of coal to be eventually mined in the three counties is 3,762,632,114 short tons.

MINABLE COALS BY MAGISTERIAL DISTRICTS.

The minable coals of the three counties have been described by magisterial districts on previous pages of this Chapter. In the Index, at the end of this Report, under the title of "Minable Coals by Magisterial Districts" will be found a list of page references making this information readily available for the study of any particular district.

TABLE OF COAL ANALYSES.

The first of the following tables contains the chemical analyses, calorific determinations and fuel ratios of 115 mines and prospects sampled in the territory of this Report by members of the Survey Staff. Those from the commercial mines were collected according to the method outlined by the U. S. Bureau of Mines, being quartered and sealed in tin cans in the mines. The samples from the country mines were collected in bags with as much care as could be observed with the scanty equipment at hand. The chemical work for this

table was mostly done by J. B. Krak, Assistant Chemist, under the direction and with the assistance of B. H. Hite, Chief Chemist, aided for a short time by W. L. Linton. However, a number of the analyses are those which were previously published in former Reports of the Survey, Volumes II and II(A) and Bulletin 2, and these were made under the same careful conditions and are the work of former chemists of the Survey, under the direction of Mr. Hite.

The second table contains the analyses of commercial mines at which the samples were collected by members of the U. S. Geological Survey and the U. S. Bureau of Mines Staffs, and analyzed in the U. S. Geological Survey and the U. S. Bureau of Mines Laboratories, as published in Bulletins 22 and 85 of the latter, the detailed page references to which are given throughout the text under the description of the mines.

The analyses from samples collected by J. B. Dilworth for E. V. d'Invilliers, of Philadelphia, Pa., and analyzed by A. S. McCreath & Son, of Harrisburg, Pa., and miscellaneous analyses by others, are given in the text under the proper mine number.

The numbers at the lefthand margin correspond to the numbers given with the mine sections in the text and with the mine symbols on Map II:

Table of Coal Analyses by W. Va. Geological Survey.

No. on Map II.	MINE.	County.	Coal Bed	Condition of Sample	PROXIMATE				Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
					Moisture	Volatile Matter	Fixed Carbon	Phosphorus	Ash	Sulphur	Carbon	Hydrogen	Oxygen	Nitrogen			
101	Early Stanley Heirs	R	No. 5 Block	A. R.	1.32	36.13	59.60	0.02	2.95	0.62							
103	Four States C. & C. Co	R	No. 5 Block	A. R.	1.12	34.48	56.21	0.009	8.19	0.60							
104	Elijah Bradley	R	No. 5 Block	A. R.	5.40	34.78	56.06	0.009	3.76	0.52							
	Average	R	No. 5 Block	A. R.	2.61	35.13	57.29	0.013	4.97	0.58							
2	Four States C. & C. Co	R	Winifrede	A. D.	0.65	31.85	60.53	0.007	6.97	0.95	80.75	5.16	5.01	1.16	14,646	14,656	6.73
3	Four States C. & C. Co	R	Winifrede	A. R.	1.07	35.03	58.25	0.006	5.65	0.50							
117	Rowland Land Co	R	Winifrede	A. R.	2.50	33.90	59.50	0.004	4.10	0.56							
134.A	Rowland Land Co	R	Winifrede	A. R.	1.03	29.19	68.58	0.002	1.20	0.58							
	Average	R	Winifrede	A. R.	1.53	32.71	62.11	0.004	3.65	0.55							
150	Rowland Land Co	R	Alma	A. R.	1.20	32.29	62.56	0.006	3.95	0.69							
151.A	Rowland Land Co	R	Alma	A. R.	1.32	32.24	64.83	0.004	1.61	0.85							
151B	Rowland Land Co	R	Alma	A. R.	1.26	31.84	64.78	0.005	2.12	0.85							
160.A	Rowland Land Co	R	Alma	A. R.	0.85	32.45	63.90	0.009	2.80	0.78							
164	Rowland Land Co	R	Alma	A. R.	1.87	32.43	64.06	0.003	1.64	0.82							
	Average	R	Alma	A. R.	1.30	32.25	64.03	0.009	2.42	0.80							
187	Rowland Land Co	R	Campbell Creek	A. R.	1.27	31.23	59.20	0.002	8.30	0.88							
189	Rowland Land Co	R	Campbell Creek	A. R.	1.46	31.19	65.01	0.002	2.34	0.81							
194	Rowland Land Co	R	Campbell Creek	A. R.	1.18	30.94	66.00	0.004	1.88	0.70							
210.A	Rowland Land Co	R	Campbell Creek	A. R.	0.70	30.07	67.47	0.003	1.76	0.63							
	Average	R	Campbell Creek	A. R.	1.15	30.86	64.42	0.003	3.57	0.75							
219	Rowland Land Co	R	Powellton	A. R.	0.82	30.91	60.72	0.004	7.55	0.63							
222	Four States C. & C. Co	R	Eagle	A. R.	1.32	29.28	62.92	0.009	6.48	0.67							
223	Robson & Prichard	R	Eagle	A. R.	2.98	29.02	63.11	0.004	4.89	0.54							
235	W. Va. Coal Land Co	R	Eagle	A. R.	1.71	31.54	62.70	0.008	4.05	0.63							
238	Milburn C. & C. Co	R	Eagle	A. R.	1.06	33.09	61.39	0.006	4.46	0.63							
243	Solvay Collieries Co	R	Eagle	A. R.	2.33	31.76	62.56	0.001	3.35	0.55							
247	Mich. & W. Va. Coal Co	R	Eagle	A. R.	2.01	30.71	62.93	0.001	4.35	0.60							
252	Willis Branch Coal Co	F	Eagle	A. D.	0.95	28.40	66.99	0.025	3.66	0.74	85.57	4.28	4.44	1.31	15,213	14,791	10.56
252	Willis Branch Coal Co	F	Eagle	A. R.	1.50	28.25	66.61	0.025	3.64	0.74	85.10	4.34	4.88	1.30	15,129	14,720	9.99
253	Rowland Land Co	R	Eagle	A. R.	1.00	26.04	70.60	0.002	2.36	0.66							
257	Rowland Land Co	R	Eagle	A. R.	1.13	31.66	65.69	0.002	1.52	0.67							
260	Rowland Land Co	R	Eagle	A. R.	0.90	29.89	65.96	0.009	3.25	0.66							
269	Rowland Land Co	R	Eagle	A. R.	4.08	28.77	62.38	0.013	4.77	0.52							
275	Rowland Land Co	R	Eagle	A. R.	1.15	28.53	68.53	0.005	1.79	0.60							
280	Rowland Land Co	R	Eagle	A. R.	0.87	30.40	65.99	0.006	2.74	0.65							
282	Rowland Land Co	R	Eagle	A. R.	1.07	29.23	68.25	0.004	1.45	0.66							
288	Rowland Land Co	R	Eagle	A. R.	1.52	29.00	64.32	0.013	5.16	0.70							
292	John Q. Dickinson	R	Eagle	A. R.	1.86	26.98	63.47	0.007	7.69	0.65							
293	Jacob Jarrell	R	Eagle	A. R.	0.90	29.27	64.70	0.004	5.13	0.76							

Table of Coal Analyses by W. Va. Geological Survey.

No. on Map II.	MINE.	County.	Coal Bed	Condition of Sample	PROXIMATE				Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
					Moisture	Volatile Matter	Fixed Carbon	Phosphorus	Ash	Sulphur	Carbon	Hydrogen	Oxygen	Nitrogen			
295	J. Q. Dickinson	R	Eagle	A. R.	1.35	27.92	66.60	0.006	4.13	0.85	.....	.....	.....	.....	.....	.....	.....
296	J. Q. Dickinson	R	Eagle	A. R.	0.55	28.72	66.71	0.002	4.02	1.46	.....	.....	.....	.....	.....	.....	.....
303	Rowland Land Co	R	Eagle	A. R.	2.07	26.98	64.10	0.025	6.85	0.73	.....	.....	.....	.....	.....	.....	.....
304	Rowland Land Co	R	Eagle	A. R.	0.60	28.14	61.61	0.016	9.65	1.14	.....	.....	.....	.....	.....	.....	.....
305	Rowland Land Co	R	Eagle	A. R.	1.06	28.47	69.28	0.004	1.19	0.62	.....	.....	.....	.....	.....	.....	.....
314	Rowland Land Co	R	Eagle	A. R.	0.87	29.03	66.50	0.005	3.60	0.78	.....	.....	.....	.....	.....	.....	.....
	Average	R	Eagle	A. R.	1.47	29.29	65.02	0.007	4.22	0.71	.....	.....	.....	.....	.....	.....	.....
.....	—— (Dorothy)	R	Eagle	A. D.	0.60	34.40	60.16	0.011	4.84	1.68	81.15	4.90	6.24	1.19	14,898	14,427	7.32
312	Dow Jarrell Heirs	R	Little Eagle	A. R.	1.16	32.78	63.29	0.008	2.77	0.81	.....	.....	.....	.....	.....	.....	.....
325	W. Va. Coal Land Co	R	Lower War Eagle	A. R.	0.93	31.22	61.45	0.004	6.40	0.66	.....	.....	.....	.....	.....	.....	.....
332	Rowland Land Co	R	Lower War Eagle	A. R.	0.75	29.14	66.28	0.003	3.83	0.70	.....	.....	.....	.....	.....	.....	.....
341	Jacob Jarrell	R	Lower War Eagle	A. R.	4.96	30.70	56.94	0.016	7.40	1.02	.....	.....	.....	.....	.....	.....	.....
342	John Q. Dickinson	R	Lower War Eagle	A. R.	0.89	28.21	62.29	0.009	8.61	1.48	.....	.....	.....	.....	.....	.....	.....
344	Rowland Land Co	R	Lower War Eagle	A. R.	1.17	26.33	65.93	0.007	6.57	2.14	.....	.....	.....	.....	.....	.....	.....
347	Rowland Land Co	R	Lower War Eagle	A. R.	1.84	28.27	67.56	0.004	2.33	0.88	.....	.....	.....	.....	.....	.....	.....
350	Rowland Land Co	R	Lower War Eagle	A. R.	0.64	26.62	67.41	0.002	5.33	1.77	.....	.....	.....	.....	.....	.....	.....
	Average	R	Lower War Eagle	A. R.	1.60	28.64	63.98	0.006	5.78	1.23	.....	.....	.....	.....	.....	.....	.....
366A	Rowland Land Co	R	Gilbert	A. R.	1.02	24.46	70.64	0.014	3.88	0.88	.....	.....	.....	.....	.....	.....	.....
368	Henry Wright	R	Douglas	A. R.	0.99	23.74	70.49	0.029	4.78	1.87	.....	.....	.....	.....	.....	.....	.....
7	New River Co. (Price Hill)	R	Sewell	A. D.	0.55	19.85	74.04	0.006	5.56	2.17	83.98	4.11	2.92	1.26	14,860	14,627	9.88
7	New River Co. (Price Hill)	R	Sewell	A. R.	0.95	19.77	73.74	0.006	5.54	2.17	83.65	4.15	3.23	1.26	14,801	14,580	9.54
8	McKell C. & C. Co. (Oswald)	R	Sewell	A. D.	0.65	19.70	75.78	0.004	3.87	1.12	85.75	4.47	3.47	1.32	15,320	15,021	11.68
8	McKell C. & C. Co. (Oswald)	R	Sewell	A. R.	0.78	19.67	75.68	0.004	3.87	1.12	85.64	4.48	3.57	1.32	15,300	15,003	11.51
9	McKell C. & C. Co. (Graham)	R	Sewell	A. D.	0.70	18.85	76.54	0.006	3.91	0.98	84.56	4.31	4.94	1.30	14,990	14,627	9.45
9	McKell C. & C. Co. (Graham)	R	Sewell	A. R.	0.94	18.80	76.36	0.006	3.90	0.98	84.36	4.34	5.12	1.30	14,944	14,598	9.25
10	McKell C. & C. Co. (Tamroy)	R	Sewell	A. D.	1.10	18.90	77.65	0.010	2.35	0.54	87.42	4.45	3.92	1.32	15,220	15,191	13.94
10	McKell C. & C. Co. (Tamroy)	R	Sewell	A. R.	2.03	18.71	76.93	0.010	2.33	0.54	86.60	4.55	4.67	1.31	15,077	15,079	12.37
13	New River Co. (Prosperity)	R	Sewell	A. D.	1.05	17.80	78.41	0.001	2.74	0.63	85.48	4.09	5.79	1.27	15,060	14,548	10.02
13	New River Co. (Prosperity)	R	Sewell	A. R.	1.37	17.74	78.16	0.001	2.73	0.63	85.21	4.13	6.03	1.27	15,012	14,515	9.72
14	New River Co. (Cranberry)	R	Sewell	A. D.	1.00	18.10	79.35	0.002	1.55	0.47	87.13	4.27	5.25	1.33	15,395	14,939	12.81
14	New River Co. (Cranberry)	R	Sewell	A. R.	1.51	18.01	78.94	0.002	1.54	0.47	86.69	4.33	5.65	1.32	15,441	14,873	12.06
15	New River Co. (Skelton)	R	Sewell	A. D.	1.00	17.90	79.01	0.003	2.09	0.57	85.14	4.73	6.04	1.43	15,350	14,877	10.47
15	New River Co. (Skelton)	R	Sewell	A. R.	1.54	17.80	78.58	0.003	2.08	0.57	84.68	4.79	6.45	1.43	15,267	14,808	9.93
16	New River Co. (Sprague)	R	Sewell	A. D.	0.90	18.60	78.89	0.002	1.61	0.58	87.18	4.55	4.72	1.36	15,460	15,160	13.77
16	New River Co. (Sprague)	R	Sewell	A. R.	1.17	18.55	78.67	0.002	1.61	0.58	86.94	4.58	4.93	1.36	15,418	15,118	13.29
17	W. Va. Coal Co. (Ragland)	R	Sewell	A. R.	0.91	22.14	73.40	0.006	3.55	0.69	.....	.....	.....	.....	.....	.....	.....
18	Lanark C. & C. Co. (No. 3)	R	Sewell	A. D.	0.80	20.30	76.50	0.002	2.40	0.86	84.11	4.59	6.66	1.38	15,080	14,601	9.28
18	Lanark C. & C. Co. (No. 3)	R	Sewell	A. R.	0.96	20.27	76.37	0.002	2.40	0.86	83.98	4.61	6.77	1.38	15,056	14,580	9.16
19	Stonecoal C. & C. Co. (Sewell)	R	Sewell	A. D.	0.70	20.15	76.73	0.003	2.42	0.71	85.91	4.59	5.08	1.29	15,470	14,980	11.45
19	Stonecoal C. & C. Co. (Sewell)	R	Sewell	A. R.	0.90	20.11	76.57	0.003	2.42	0.71	85.74	4.61	5.23	1.29	15,439	14,956	11.21

Table of Coal Analyses by W. Va. Geological Survey.

No. on Map II.	MINE.	County.	Coal Bed	Condition of Sample	PROXIMATE				Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
					Moisture	Volatile Matter	Fixed Carbon	Phosphorus	Ash	Sulphur	Carbon	Hydrogen	Oxygen	Nitrogen			
21	Raleigh C. & C. Co. (No. 5)	R	Sewell	A. D.	0.90	17.90	77.82	0.005	3.38	0.61	85.82	4.53	4.33	1.33	15,050	14,992	11.13
21	Raleigh C. & C. Co. (No. 5)	R	Sewell	A. R.	1.80	17.74	77.11	0.005	3.35	0.61	85.05	4.63	5.04	1.32	14,915	14,877	10.14
22	New River Co. (Mabscott)	R	Sewell	A. D.	0.75	17.25	78.68	0.003	3.32	0.97	85.46	4.48	4.41	1.36	15,080	14,906	11.05
22	New River Co. (Mabscott)	R	Sewell	A. R.	0.95	17.22	78.51	0.003	3.32	0.97	85.29	4.50	4.56	1.36	15,050	14,882	10.82
23	Home Coal Co	R	Sewell	A. D.	0.60	18.40	78.00	0.007	3.00	0.93	85.94	4.69	4.08	1.36	15,180	15,129	12.14
23	Home Coal Co	R	Sewell	A. R.	0.77	18.37	77.86	0.007	3.00	0.93	85.79	4.71	4.21	1.36	15,153	15,111	11.90
24	New River Co. (Beckley)	R	Sewell	A. D.	1.10	17.65	78.46	0.005	2.79	0.74	86.57	4.49	4.03	1.38	15,256	15,096	12.70
24	New River Co. (Beckley)	R	Sewell	A. R.	1.31	17.61	78.29	0.005	2.79	0.74	86.39	4.51	4.19	1.38	15,224	15,071	12.38
26	New River Coll. Co. (No. 6)	R	Sewell	A. R.	0.57	19.37	76.83	0.008	3.23	1.51	.....	.....	.....	.....	.....	.....	.....
	Average	R	Sewell	A. D.	0.84	18.67	77.56	0.0042	2.93	0.85	85.75	4.45	4.69	1.33	15,198	14,907	11.41
	Average	R	Sewell	A. R.	1.15	18.87	77.00	0.0045	2.98	0.88	85.43	4.49	4.98	1.33	15,150	14,861	10.95
29	Raleigh Coal & Coke Co. (No. 3)	R	Beckley	A. D.	0.80	16.18	80.69	0.006	2.33	0.56	88.31	4.40	3.07	1.33	15,380	15,358	16.35
29	Raleigh Coal & Coke Co. (No. 3)	R	Beckley	A. R.	0.96	16.15	80.56	0.006	2.33	0.56	88.17	4.42	3.19	1.33	15 355	15,340	15.97
32	Piney Mining Co. (No. 2)	R	Beckley	A. D.	0.85	18.15	75.32	0.007	5.68	0.93	82.11	4.36	5.64	1.28	14,820	14,242	7.25
32	Piney Mining Co. (No. 2)	R	Beckley	A. R.	1.10	18.11	75.12	0.007	5.67	0.93	81.91	4.39	5.82	1.28	14,783	14,220	7.13
33	Piney Mining Co. (No. 4)	R	Beckley	A. D.	6.75	16.49	78.32	0.013	4.44	0.72	85.93	4.10	3.48	1.33	15,100	14,798	10.87
33	Piney Mining Co. (No. 4)	R	Beckley	A. R.	0.99	16.46	78.12	0.013	4.43	0.72	85.73	4.13	3.66	1.33	15,064	14,776	10.57
42	New River Coll. Co. (No. 1)	R	Beckley	A. D.	0.70	16.35	78.92	0.011	4.03	0.77	85.11	4.27	4.43	1.39	15,192	14,717	10.06
42	New River Coll. Co. (No. 1)	R	Beckley	A. R.	2.15	16.11	77.77	0.011	3.97	0.76	83.87	4.43	5.60	1.37	14,870	14,540	8.76
50	Slab Fork Coal Co. (No. 1)	R	Beckley	A. D.	0.90	16.30	79.18	0.028	3.62	1.01	86.67	4.50	2.82	1.38	15,208	15,203	13.46
50	Slab Fork Coal Co. (No. 1)	R	Beckley	A. R.	1.41	16.22	78.77	0.028	3.60	1.00	86.23	4.56	3.24	1.37	15,131	15,140	12.61
51	Winding Gulf Coll. Co. (No. 1)	R	Beckley	A. R.	0.75	20.34	74.51	0.002	4.40	0.56	.....	.....	.....	.....	.....	.....	.....
56	McAlpin Coal Co	R	Beckley	A. R.	0.98	18.27	78.41	0.011	2.34	0.55	.....	.....	.....	.....	.....	.....	.....
426	Piney Coking Coal Co	R	Beckley	A. R.	1.39	19.50	73.82	0.073	5.29	0.58	.....	.....	.....	.....	.....	.....	.....
451	C. C. Mooman	R	Beckley	A. R.	0.76	19.11	76.86	0.006	3.27	0.85	.....	.....	.....	.....	.....	.....	.....
	Average	R	Beckley	A. D.	0.80	16.69	78.49	0.013	4.02	0.80	85.63	4.32	3.89	1.34	15,140	14,864	11.60
	Average	R	Beckley	A. R.	1.17	17.81	77.10	0.016	3.92	0.72	85.18	4.39	4.30	1.33	15,041	14,803	11.01
63	Stonewall C. & C. Co. (abandoned)	R	Fire Creek	A. D.	0.70	17.52	77.89	0.008	3.89	0.76	85.05	4.66	4.37	1.27	15 290	14.954	10.19
63	Stonewall C. & C. Co. (abandoned)	R	Fire Creek	A. R.	1.04	17.46	77.62	0.008	3.88	0.76	84.76	4.70	4.63	1.27	15,238	14,910	9.96
64	Royal C. & C. Co. (Royal)	R	Fire Creek	A. R.	0.62	18.57	78.36	0.014	2.45	0.62	.....	.....	.....	.....	15,438	.....	.....
66	Wright C. & C. Co. (No. 1)	R	Fire Creek	A. R.	0.56	18.36	75.73	0.063	5.35	0.59	.....	.....	.....	.....	15,182	.....	.....
459	.....	R	Fire Creek	A. R.	3.32	23.01	70.35	0.004	3.32	0.63	.....	.....	.....	.....	.....	.....	.....
494	J. J. Tolley	R	Fire Creek	A. R.	0.50	20.56	77.37	0.004	1.57	0.73	.....	.....	.....	.....	.....	.....	.....
	Average	R	Fire Creek	A. R.	1.21	19.59	75.89	0.019	3.31	0.67	.....	.....	.....	.....	15,286	.....	.....
560	Western Poca C. Co	R	No. 8 Pocahontas	A. R.	0.74	19.43	77.25	0.001	2.58	0.77	.....	.....	.....	.....	.....	.....	.....
67	Buckeye C. & C. Co	M	No. 6 Pocahontas	A. R.	4.25	25.22	64.89	0.008	5.64	0.59	.....	.....	.....	.....	.....	.....	.....
588	Davis & Thompson	R	No. 6 Pocahontas	A. R.	0.80	17.77	78.67	0.002	2.76	0.81	.....	.....	.....	.....	.....	.....	.....

Table of Coal Analyses by W. Va. Geological Survey.

No. on Map II.	MINE.	County.	Coal Bed	Condition of Sample	PROXIMATE				Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
					Moisture	Volatile Matter	Fixed Carbon	Phosphorus	Ash	Sulphur	Carbon	Hydrogen	Oxygen	Nitrogen			
611	Pocahontas C. & C. Co	M	No. 6 Pocahontas	A. R.	0.57	20.30	77.20	0.006	1.93	0.88	.....	.....	.....	.....	.....	.....	.....
	Average	..	No. 6 Pocahontas	A. R.	1.87	21.10	73.59	0.005	3.44	0.76	.....	.....	.....	.....	.....	.....	.....
68	Algonquin Coal Co	M	No. 3 Pocahontas	A. R.	0.54	19.47	76.29	0.001	3.70	0.65	.....	.....	.....	.....	.....	.....	.....
69	Thomas Coal Co (No. 1)	M	No. 3 Pocahontas	A. R.	0.53	12.29	83.47	0.001	3.71	0.60	.....	.....	.....	.....	.....	.....	.....
70	S. P. Patterson Poca Co	M	No. 3 Pocahontas	A. R.	0.64	19.64	70.65	0.004	9.07	0.71	.....	.....	.....	.....	.....	.....	.....
70A	S. P. Patterson Poca Co	M	No. 3 Pocahontas	A. R.	0.35	18.60	77.91	0.002	3.14	0.60	.....	.....	.....	.....	.....	.....	.....
76	Smokeless C. & C. Co	M	No. 3 Pocahontas	A. D.	1.70	14.92	80.12	0.004	3.26	0.59	87.38	4.07	3.76	0.94	15,300	14,947	12.45
78	Weyanoke C. & C. Co	M	No. 3 Pocahontas	A. D.	1.35	16.01	78.38	0.006	4.26	0.51	85.32	4.27	4.74	0.90	15,314	14,710	9 48
78	Weyanoke C. & C. Co	M	No. 3 Pocahontas	A. R.	1.89	15.93	77.94	0.006	4.24	0.51	84.86	4.33	5.16	0.90	15,052	14,652	9.03
87	Thos. D. Lee Coal Co	M	No. 3 Pocahontas	A. R.	0.69	17.49	75.20	0.001	6.62	0.93	.....	.....	.....	.....	.....	.....	.....
94	Pawama C. & C. Co. (Pawama)	M	No. 3 Pocahontas	A. D.	1.30	15.44	77.81	0.006	5.45	0.86	82.85	4.87	5.02	0.95	14,939	14,713	7.91
94	Pawama C. & C. Co. (Pawama)	M	No. 3 Pocahontas	A. R.	1.94	15.35	77.29	0.006	5.42	0.86	82.32	4.94	5.51	0.95	14,843	14,643	7.53
	Hiawatha C. & C. Co. (Hiawatha)	M	No. 3 Pocahontas	A. D.	1.25	15.99	78.02	0.004	4.74	0.66	83.97	4.00	5.67	0.96	14,829	14,292	8.06
	Hiawatha C. & C. Co. (Hiawatha)	M	No. 3 Pocahontas	A. R.	1.78	15.91	77.59	0.004	4.72	0.66	83.53	4.06	6.07	0.96	14,750	14,223	7.74
	Piedmont Coll. Co. (Piedmont)	M	No. 3 Pocahontas	A. D.	1.50	15.62	74.01	0.008	8.87	0.49	82.01	3.73	3.97	0.93	14,435	13 901	6.39
	Piedmont Coll. Co. (Piedmont)	M	No. 3 Pocahontas	A. R.	2.13	15.53	73.51	0.008	8.83	0.49	81.49	3.80	4.46	0.93	14,344	13.864	6.12
	Spring C. M. Co. (Spring)	M	No. 3 Pocahontas	A. D.	1.50	15.50	79.02	0.005	3.98	0.63	86.73	4.17	3.53	0.96	15,468	15,016	11.55
	Wenonah C. & C. Co. (Wenonah)	M	No. 3 Pocahontas	A. D.	1.25	14.95	78.38	0.006	5.42	0.55	83.53	4.18	5.37	0.95	14,820	14,350	7.74
	Wenonah C. & C. Co. (Wenonah)	M	No. 3 Pocahontas	A. R.	1.78	14.87	77.96	0.006	5.39	0.55	83.08	4.24	5.79	0.95	14,742	14,309	7.43
90	Louisville C. & C. Co. (Louisville)	M	No. 3 Pocahontas	A. D.	0.36	19.04	77.24	0.0025	3.36	0.56	.....	.....	.....	.....	15,403	.....	.....
	Goodwill C. & C. Co. (Goodwill)	M	No. 3 Pocahontas	A. D.	0.13	17.22	79.30	0.0025	3.35	0.68	.....	.....	.....	.....	15,518	.....	.....
	Mill Creek C. & C. Co. (Mill Creek)	M	No. 3 Pocahontas	A. D.	0.14	18.82	77.11	0.008	3.93	0.87	.....	.....	.....	.....	15,239	.....	.....
	Coaldale C. & C. Co. (Coaldale)	M	No. 3 Pocahontas	A. D.	0.65	17.78	74.58	0.004	6.99	0.67	.....	.....	.....	.....	14,874	.....	.....
85	Booth-Bowen C. & C. Co. (Reliance)	M	No. 3 Pocahontas	A. D.	0.16	18.85	77.52	0.001	3.47	0.54	.....	.....	.....	.....	15,384	.....	.....
84	Buckeye C. & C. Co. (Buckeye)	M	No. 3 Pocahontas	A. D.	0.16	17.33	77.75	0.006	4.76	0.87	.....	.....	.....	.....	15,296	.....	.....
86	Caswell Creek Coll. Co. (Caswell)	M	No. 3 Pocahontas	A. D.	0.17	18.05	79.01	0.002	2.77	0.88	.....	.....	.....	.....	15,550	.....	.....
634	Piney Coking Coal Land Co	R	No. 3 Pocahontas	A. R.	0.38	18.57	75.59	0.007	5.46	0.81	.....	.....	.....	.....	.....	.....	.....
636	Western Poca. Coal Co	R	No. 3 Pocahontas	A. R.	1.12	19.12	75.89	0.006	3.87	0.84	.....	.....	.....	.....	.....	.....	.....
638	Piney Coking Coal Land Co	R	No. 3 Pocahontas	A. R.	0.75	17.90	76.42	0.003	4.93	0.66	.....	.....	.....	.....	.....	.....	.....
640	Piney Coking Coal Land Co	R	No. 3 Pocahontas	A. R.	0.87	17.16	78.84	0.002	3.13	0.69	.....	.....	.....	.....	.....	.....	.....
641	Piney Coking Coal Land Co	R	No. 3 Pocahontas	A. R.	0.48	18.61	73.44	0.002	7.47	0.54	.....	.....	.....	.....	.....	.....	.....
644	I. H. McKinney	R	No. 3 Pocahontas	A. R.	0.68	18.97	75.63	0.005	4.72	0.85	.....	.....	.....	.....	.....	.....	.....
659	George Smith	M	No. 3 Pocahontas	A. R.	0.81	19.85	66.48	0.012	12.86	1.85	.....	.....	.....	.....	.....	.....	.....
	Average	M	No. 3 Pocahontas	A. D.	0.83	16.82	77.73	0.0046	4.62	0.67	84.54	4.18	4.58	0.94	15,169	14,519	9.08
	Average	R	No. 3 Pocahontas	A. R.	1.31	16.30	77.06	0.0042	5.33	0.67	83.05	4.27	5.40	0.94	14,746	14,338	7.57
	Average	R	No. 3 Pocahontas	A. R.	0.73	18.60	74.61	0.005	6.06	0.89	.....	.....	.....	.....	.....	.....	.....
710	McCreery Bros	R	No. 2 Pocahontas	A. R.	0.76	17.73	78.06	0.003	3.45	0.91	.....	.....	.....	.....	.....	.....	.....
713	McCreery Bros	R	No. 2 Pocahontas	A. R.	0.72	19.67	73.78	0.003	5.83	0.80	.....	.....	.....	.....	.....	.....	.....
714	Western Poca C. Co	R	No. 2 Pocahontas	A. R.	0.51	16.34	61.34	0.002	21.69	0.49	.....	.....	.....	.....	.....	.....	.....
731	James Gerhard	M	No. 2 Pocahontas	A. R.	0.85	16.86	77.75	0.007	4.54	1.07	.....	.....	.....	.....	.....	.....	.....
	Average (exclusive of No. 714)	..	No. 2 Pocahontas	A. R.	0.78	18.09	76.53	0.004	4.60	0.93	.....	.....	.....	.....	.....	.....	.....

Table Showing Location of Mines Sampled by West Virginia Geological Survey Listed in Preceding Table.

No. on Map II.	Sample No.	Location of Mine.	Page of this Report	Other Report References.
101	446-K	Colcord, 1.5 mi. N. W.	96	
103	456-K	Dorothy, 1.0 mi. S.	97	
104	448-K	Launa, 2.2 mi. S. E.	97	
2	.....	Dorothy	392	Bull. 2, p. 285, No. 35
3	457-K	Dorothy, 1 mi. S. E.	392	
117	215-T	Colcord, 3 mi. S.	394	
134A	233-T	Colcord, 4.4 mi. S. E.	401	
150	453-K	Drews Creek, Head of	412	
151A	211-T	Indian Gap, 0.7 mi. N. E.	413	
151B	213-T	Indian Gap, 1.0 mi. E.	413	
160A	230-T	Dry Creek, 2.2 mi. N. E.	416	
164	225-T	Citie, 3.0 mi. S. 11° W.	417	
187	204-T	Launa, 2.3 mi. N. 10° W.	426	
189	206-T	Launa, 0.9 mi. W.	427	
194	451-K	Launa, 1.5 mi. S. E.	428	
210A	238-T	Dameron, 3.0 mi. N.	433	
219	231-T	Masseysville, 2.7 mi. N. E.	435	
222	462-K	Dorothy	438	
223	246-T	Dorothy, 1.7 mi. N. E.	438	
235	465-K	Colcord, 2.7 mi. N. 78° E.	442	
238	447-K	Artie, 2 4 mi. N.	443	
243	248-T	Artie, 1.7 mi. N. E.	444	
247	251-T	Clear Creek, 1.3 mi. W.	446	
252	.....	Herberton, Near	448	Bull. 2, p. 257, No. 23
253	242-T	Dameron, 2.0 mi. N.	448	
257	203-T	Jarrolds Valley, 3.2 mi. S. W.	450	
260	207-T	Launa, 1.1 mi. W.	451	
269	449-K	Citie, 2.9 mi. N. 20° W.	453	
275	454-K	Citie, 1.4 mi. S. W.	455	
280	452-K	Citie, 3.4 mi. S. W.	457	
282	210-T	Citie, 2.9 mi. S. W.	457	
288	226-T	Redbird, 3.2 mi. N. W.	459	
292	468-K	Dry Creek, 1.5 mi. N. W.	460	
293	216-T	Dry Creek, 2.2 mi. N.	460	
295	234-T	Masseysville, 0.5 mi N. E.	461	
296	236-T	Masseyville, 1.7 mi. N. E.	462	
303	241-T	Dameron, 1.5 mi. N.	463	
304	455-K	Masseysville, 2.5 mi. N. E.	464	
305	470-K	Posey, 0.4 mi. W.	464	
314	228-T	Dry Creek, 2 0 mi. N. E.	461	
.....	.....	Dorothy	.....	Bull. 2, p. 257, No. 24
312	461-K	Dry Creek, 2.7 mi. N.	467	
325	464-K	Colcord, 1.7 mi. N. E.	471	
332	254-T	Clear Creek, 2.0 mi. N. E.	473	
341	459-K	Dry Creek, 2¼ mi. N.	475	
342	463-K	Dry Creek, 0.8 mi. N. W.	476	
344	235-T	Masseysville, 0.8 mi. N. E.	477	
347	221-T	Posey, 0.9 mi N. W.	478	
350	240-T	Dameron, 2.1 mi. N.	479	

Table Showing Location of Mines Sampled by West Virginia Geological Survey Listed in Preceding Table.

No. on Map II.	Sample No.	Location of Mine.	Page of this Report	Other Report References.
366A	223-T	Peachtree S. H., 1.0 mi. S....	484	
368	252-T	Clear Creek, 3.3 mi. S. E.....	486	
7	.....	Price Hill.....	490	Bull. 2, p. 241, No. 11
8	.....	Price Hill, 1.0 mi. S.....	490	Bull. 2, p. 241, No. 13
9	.....	Tamroy	491	Bull. 2, p. 241, No. 14
10	.....	Price Hill, 2.6 mi. S.....	491-2	Bull. 2, p. 241, No. 15
13	.....	Beckley, 3.2 mi. N. W.....	494	Bull. 2, p. 241, No. 20
14	.....	Beckley, 2.9 mi. N. W.....	494	Bull. 2, p. 241, No. 19
15	.....	Beckley, 1.6 mi. N.....	494-5	Bull. 2, p. 241, No. 18
16	.....	Beckley, 0.6 mi. N.....	495	Bull. 2, p. 241, No. 21
17	476-K	Skelton, 1.0 mi. N.....	495	
18	.....	Lanark, 0.6 mi. N. W.....	495-6	Bull. 2, p. 241, No. 16
19	.....	Stonewall, 1.0 mi. N.....	496	Bull. 2, p. 241, No. 17
21	.....	Mabscott, 0.6 mi. N.....	498	Bull. 2, p. 241, No. 22
22	.....	Mabscott	498	Bull. 2, p. 241, No. 23
23	.....	Beckley Junction, Near.....	498-9	Bull. 2, p. 241, No. 24
24	.....	Wickham	499	Bull. 2, p. 241, No. 25
26	500-K	Harper, 0.6 mi. S.....	502	
29	.....	Raleigh	511	Bull. 2, p. 218, No. 31
32	.....	Stanaford, Near.....	512	Bull. 2, p. 218, No. 30
33	.....	Riley, 1.0 mi. E.....	512-13	Bull. 2, p. 218, No. 29
42	.....	Eccles	516	Bull. 2, p. 218, No. 32
50	.....	Slab Fork, 0.4 mi. E.....	521	Bull. 2, p. 218, No. 33
51	271-T	Winding Gulf, 0.6 mi. S. E...	522	
56	489-K	McAlpin	524	
426	277-T	Stonecoal Jct., 3.0 mi. N. E...	528	
451	492-K	Shady Spring, 1.2 mi. S. W...	535	
63	.....	Stonewall	543	Bull. 2, p. 218, No. 28
64	.....	Royal	545-6	Bull. 2, p. 233, No. 16
66	.....	Wright	546	Bull. 2, p. 233, No. 17
459	456-T	Terry	543	
494	492-K	¼ mi. up Laurel Ck. of Piney.	554	
560	290-T	Basin, 0.8 mi. E.....	569	
67	495-K	Buckeye Hollow, Head of.....	583	
588	275-T	Tams, 2.3 mi. S. E.....	577	
611	493-K	Crystal, 0.9 mi. S. W.....	584	
68	291-T	Clarks Gap.....	602-3	
69	292-T	Giatto, 1.3 mi. N. W.....	603	
70	293-T	Pilot Knob, 0.4 mi. E.....	603	
70A	294-T	Pilot Knob, 0.4 mi. E.....	604	
76	.....	Smokeless	606	Bull. 2, p. 218, No. 11
78	.....	Weyanoke	607	Bull. 2, p. 217, No. 10
87	296-T	Simmons, 0.5 mi. N.....	613	
94	.....	Matoaka, 1.0 mi. S. W., Pawama Mine.....	620-1	Bull. 2, p. 217, No. 9
	.....	Hiawatha Mine.....	.....	Bull. 2, p. 218, No. 12
.....	.....	Piedmont Mine.....	.....	Bull. 2, p. 218, No. 13
.....	.....	Spring Mine.....	.....	Bull. 2, p. 218, No. 14
.....	.....	Wenonah Mine.....	.....	Bull. 2, p. 218, No. 15

Table Showing Location of Mines Sampled by West Virginia Geological Survey Listed in Preceding Table.

No. on Map II.	Sample No.	Location of Mine.	Page of this Report	Other Report References.
90	.....	Goodwill, 0.7 mi. N., Louisville Mine	616	Bull. 2, p. 212, No. 31
.....	.....	Goodwill Mine	.....	Bull. 2, p. 212, No. 32
.....	.....	Mill Creek Mine	.....	Bull. 2, p. 212, No. 33
.....	.....	Coaldale Mine	.....	Bull. 2, p. 212, No. 34
85	.....	Simmons, 2.3 mi. N. W., Reliance Mine	612	Bull. 2, p. 212, No. 35
84	.....	Simmons, 1.6 mi. N. W., Buckeye Mine	611	Bull. 2, p. 212, No. 36
86	.....	Simmons, 1.8 mi. N. W., Caswell Mine	612	Bull. 2, p. 212, No. 37
634	286-T	Odd, 3 mi. W	593	
636	274-T	Stonecoal Jct., 0.4 mi. S. E	594	
638	276-T	Farley Branch, Mouth of	595	
640	279-T	Odd, 3.0 mi. N. W	595	
641	282-T	Stonecoal, Jct., 3.1 mi. E	596	
644	288-T	Odd, 2.9 mi. W	597	
659	283-T	Pear, 1.5 mi. N	601	
710	278-T	Odd, 2.4 mi. N. W	626	
713	280-T	Odd, 2.5 mi. N. W	627	
714	289-T	Stonecoal Jct., 2 mi. S. E	627	
731	496-K	Goodwill, 0.6 mi. E	631	

Table of Coal Analyses by U. S. Geological Survey and U. S. Bureau of Mines.

No. on Map II.	MINE.	Coal Bed	Average Thickness of Coal—Feet	No. of Samples Mixed to Make Composite Sample	Cond'tion of Sample	PROXIMATE			Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
						Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen			
7	New River Co. (Price Hill)	Sewell	3.9	4	A. D.	0.79	18.40	76.77	4.04	1.62	4.86	84.61	1.63	3.24	14,954	.....	11.62
7	New River Co. (Price Hill)	Sewell	3.9	4	A. R.	3.37	17.92	74.78	3.93	1.58	5.02	82.41	1.59	5.47	14,566	14,743	8.77
8	McKell C. & C. Co. (Oswald)	Sewell	3.9	4	A. D.	0.81	18.55	76.27	4.37	1.35	4.86	84.61	1.55	3.26	14,895	.....	11.09
8	McKell C. & C. Co. (Oswald)	Sewell	3.9	4	A. R.	2.99	18.14	74.60	4.27	1.32	4.99	82.75	1.52	5.15	14,567	14,787	8.78
9	McKell C. & C. Co. (Graham)	Sewell	4.1	3	A. D.	0.70	18.48	77.64	3.18	0.81	4.80	86.03	1.50	3.68	15,048	.....	12.54
9	McKell C. & C. Co. (Graham)	Sewell	4.1	3	A. R.	3.28	18.00	75.62	3.10	0.79	4.97	83.79	1.46	5.89	14,657	14,843	9.32
10	McKell C. & C. Co. (Tamroy)	Sewell	4.6	3	A. D.	0.92	16.83	79.65	2.60	0.56	4.86	86.65	1.63	3.70	15,228	.....	13.75
10	McKell C. & C. Co. (Tamroy)	Sewell	4.6	3	A. R.	2.90	16.49	78.06	2.55	0.55	4.98	84.92	1.60	5.40	14,924	15,041	10.68
13	New River Co. (Prosperity)	Sewell	3.9	3	A. D.	0.80	17.60	77.71	3.89	0.89	4.71	85.32	1.61	3.58	15,016	.....	11.42
13	New River Co. (Prosperity)	Sewell	3.9	3	A. R.	5.07	16.84	74.37	3.72	0.85	4.99	81.65	1.54	7.25	14,369	14,440	7.44
14	New River Co. (Cranberry)	Sewell	4.4	3	A. R.	4.40	16.15	77.16	2.29	0.49	4.98	84.08	1.47	6.69	14,764	.....	9.35
16	New River Co. (Sprague)	Sewell	4.1	3	A. D.	0.62	17.30	79.52	2.56	0.67	4.77	87.08	1.58	3.34	15 221	.....	14.76
16	New River Co. (Sprague)	Sewell	4.1	3	A. R.	4.79	16.57	76.19	2.45	0.64	5.04	83.42	1.51	6.94	14,582	14,746	8.85
18	Lanark C. & C. Co. (No. 3)	Sewell	4.8	2	A. D.	1.07	17.07	78.78	3.08	0.69	4.98	86.29	1.34	3.62	15,192	.....	12.88
18	Lanark C. & C. Co. (No. 3)	Sewell	4.8	2	A. R.	3.15	16.71	77.12	3.02	0.68	5.11	84.48	1.31	5.40	14,873	15,062	10.03
18	Lanark C. & C. Co. (No. 4)	Sewell	4.6	3	A. D.	0.77	17.24	79.42	2.57	0.54	4.93	86.26	1.48	4.22	15,286	.....	12.70
18	Lanark C. & C. Co. (No. 4)	Sewell	4.6	3	A. R.	3.95	16.69	76.87	2.49	0.52	5.13	83.50	1.43	6.93	14,796	14,809	8.86
20	Piney Mining Co. (No. 3)	Sewell	4.2	3	A. D.	0.72	14.79	80.70	3.79	0.63	4.86	85.83	1.46	3.43	15,007	.....	11.88
20	Piney Mining Co. (No. 3)	Sewell	4.2	3	A. R.	3.20	14.42	78.68	3.70	0.61	5.02	83.68	1.42	5.57	14,632	14,875	9.03
21	Raleigh C. & C. Co. (No. 5)	Sewell	3.4	3	A. D.	0.80	17.50	77.90	3.76	1.18	4.87	85.90	1.59	2.70	15,070	.....	13.34
21	Raleigh C. & C. Co. (No. 5)	Sewell	3.4	3	A. R.	3.30	17.00	76.00	3.66	1.15	5.03	83.67	1.55	4.94	14,580	14,950	9.73
22	New River Co. (Mabscott)	Sewell	3.7	3	A. R.	3.26	15.72	78.19	2.83	0.69	4.97	84.12	1.61	5.78	14,774	.....	9.77
24	New River Co. (Beckley)	Sewell	4.0	4	A. R.	4.93	15.20	76.88	2.99	0.78	5.09	82.28	1.37	7.49	14,474	.....	7.85
25	New River Coll. Co. (Eccles No. 1)	Sewell	4.4	3	A. R.	4.19	14.22	78.02	3.57	0.61	5.05	82.93	1.44	6.40	14,544	.....	8.32
	Average	Sewell	....	....	A. D.	0.80	17.38	78.44	3.38	0.89	4.85	85.86	1.54	3.48	15,092	.....	12.70
	Average	Sewell	....	....	A. R.	3.77	16.43	76.61	3.19	0.80	5.03	83.41	1.48	6.09	14,650	14,830	9.06
27	Raleigh C. & C. Co. (No. 1)	Beckley	4.75	2	A. D.	0.75	14.84	81.20	3.21	0.63	4.69	86.67	1.55	3.25	15,188	.....	13.41
27	Raleigh C. & C. Co. (No. 1)	Beckley	4.75	2	A. R.	2.93	14.51	79.42	3.14	0.62	4.83	84.76	1.52	5.13	14,854	14,951	10.25
27	Raleigh C. & C. Co. (No. 1)	Beckley	Car	1	A. R.	2.15	15.06	75.46	7.33	0.90	4.72	82.27	1.55	3.23	14,391	.....	7.79
27	Raleigh C. & C. Co. (No. 1)	Beckley	Car	1	A. R.	4.26	16.25	73.45	6.04	0.78	4.83	81.37	1.49	5.49	14,279	.....	7.92
27	Raleigh C. & C. Co. (No. 1)	Beckley	5.1	1	A. R.	2.80	17.99	75.61	3.60	0.63	5.05	83.72	1.56	5.44	14,706	.....	9.26
28	Raleigh C. & C. Co. (No. 2)	Beckley	4.5	2	A. D.	0.80	14.50	81.20	3.48	0.75	4.53	85.41	1.53	4.30	15,100	.....	10.98
28	Raleigh C. & C. Co. (No. 2)	Beckley	4.5	2	A. R.	3.20	14.00	79.40	3.40	0.73	4.69	83.36	1.49	6.33	14,740	14 570	8.57
29	Raleigh C. & C. Co. (No. 3)	Beckley	4.5	3	A. D.	1.00	15.00	80.20	3.77	0.69	4.92	85.92	1.56	3.14	15,060	.....	12.43
29	Raleigh C. & C. Co. (No. 3)	Beckley	4.5	3	A. R.	4.20	14.50	77.60	3.65	0.67	5.13	83.08	1.51	5.96	14,570	14,830	8.64
29	Raleigh C. & C. Co. (No. 3)	Beckley	4.3	4	A. R.	4.37	18.06	74.08	3.49	0.71	4.95	82.72	1.49	6.64	14,470	.....	8.16

Table of Coal Analyses by U. S. Geological Survey and U. S. Bureau of Mines.

No. on Map II.	MINE.	Coal Bed	Average Thickness of Coal—Feet	No. of Samples Mixed to Make Composite Sample	Condition of Sample	PROXIMATE			Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
						Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Oxygen	Nitrogen			
30	Raleigh C. & C. Co. (No. 6)	Beckley	4.6	4	A. D.	0.80	16.00	78.30	4.89	0.81	4.81	84.81	1.45	3.23	14,890	.....	10.44
30	Raleigh C. & C. Co. (No. 6)	Beckley	4.6	4	A. R.	3.60	15.50	76.10	4.75	0.79	4.99	82.35	1.41	5.71	14,460	14,670	7.87
31	Piney Mining Co. (No. 1)	Beckley	Car	1	A. R.	2.14	16.83	71.91	9.12	1.20	4.74	79.60	1.41	3.93	14,024	.....	6.10
31	Piney Mining Co. (No. 1)	Beckley	Car	1	A. R.	2.56	16.08	72.87	8.49	0.85	4.75	79.85	1.34	4.72	14,044	.....	6.00
31	Piney Mining Co. (No. 1)	Beckley	6.0	1	A. D.	0.70	16.50	76.70	6.12	1.11	4.74	83.20	1.49	3.34	14,690	.....	8.79
31	Piney Mining Co. (No. 1)	Beckley	6.0	1	A. R.	3.30	16.00	74.70	5.96	1.08	4.91	81.04	1.45	5.56	14,310	14,440	7.03
32	Piney Mining Co. (No. 2)	Beckley	3.3	1	A. D.	0.80	17.50	77.40	4.28	0.68	4.87	84.91	1.51	3.75	14,970	.....	10.57
32	Piney Mining Co. (No. 2)	Beckley	3.3	1	A. R.	3.50	17.00	75.30	4.16	0.66	5.04	82.62	1.47	6.05	14,560	14,700	8.09
33	Piney Mining Co. (No. 4)	Beckley	4.1	1	A. D.	0.84	15.54	78.54	5.08	0.83	4.86	83.84	1.51	3.88	14,751	.....	9.35
33	Piney Mining Co. (No. 4)	Beckley	4.1	1	A. R.	4.71	14.93	75.48	4.88	0.80	5.10	80.57	1.45	7.20	14,157	14,355	6.67
36	Pemberton C. & C. Co. (Sophia)	Beckley	4.9	1	A. R.	3.30	14.00	77.60	5.14	0.63	4.60	82.94	1.41	5.28	14,490	.....	7.96
37	Pemberton C. & C. Co. (Big Stick)	Beckley	5.5	3	A. R.	2.24	17.54	75.40	4.82	0.63	4.52	83.73	1.62	4.68	14,573	.....	8.81
40	E. E. White Coal Co. (Glen White)	Beckley	8.9	2	A. D.	0.60	13.50	81.30	4.61	0.86	4.43	85.83	1.55	2.72	14,950	.....	11.71
40	E. E. White Coal Co. (Glen White)	Beckley	8.9	2	A. R.	4.70	13.00	77.90	4.42	0.83	4.71	82.31	1.49	6.24	14,340	14,440	7.72
45	Slab Fork Coal Co. (No. 2)	Beckley	4.6	2	A. R.	2.27	17.26	76.73	3.74	0.54	4.62	84.90	1.57	4.63	14,753	.....	10.14
45	Slab Fork Coal Co. (No. 2)	Beckley	4.0	3	A. R.	2.45	17.52	76.67	3.36	0.48	4.56	85.51	1.51	4.58	14,789	.....	10.77
45	Slab Fork Coal Co. (No. 2)	Beckley	5.1	3	A. D.	0.73	14.07	81.58	3.62	0.55	4.71	86.82	1.33	2.97	15,082	.....	13.17
45	Slab Fork Coal Co. (No. 2)	Beckley	5.1	3	A. R.	2.81	13.77	79.88	3.54	0.54	4.84	85.00	1.30	4.78	14,765	15,014	10.21
															14,040	.....	.....
46	Slab Fork Coal Co. (No. 3)	Beckley	4.3	1	A. R.	4.3	14.0	77.9	3.8	0.65	.....	.....	.....	.....	.....	.....	.....
46	Slab Fork Coal Co. (No. 3)	Beckley	4.2	3	A. R.	2.71	17.57	76.15	3.57	0.56	4.56	84.52	1.51	5.28	14,717	.....	9.55
47	Slab Fork Coal Co. (No. 5)	Beckley	3.9	4	A. R.	3.33	17.35	76.03	3.29	0.47	4.80	84.37	1.58	5.49	14,704	.....	9.61
50	Slab Fork Coal Co. (No. 1)	Beckley	5.1	2	A. D.	0.90	13.50	80.60	4.98	0.58	4.62	85.19	1.30	3.33	14,950	.....	10.25
50	Slab Fork Coal Co. (No. 1)	Beckley	5.1	2	A. R.	3.00	13.50	78.60	4.88	0.57	4.75	83.40	1.27	5.13	14,630	14,700	8.33
50	Slab Fork Coal Co. (No. 1)	Beckley	4.9	1	A. D.	0.80	13.50	79.80	5.87	0.56	4.81	84.34	1.38	3.04	14,730	.....	9.46
50	Slab Fork Coal Co. (No. 1)	Beckley	4.9	1	A. R.	2.70	13.00	78.50	5.76	0.55	4.93	82.74	1.35	4.67	14,450	14,760	7.93
50	Slab Fork Coal Co. (No. 1)	Beckley	4.9	1	A. R.	4.93	19.96	72.38	2.73	0.58	4.77	81.61	1.58	8.73	14,710	.....	7.12
50	Slab Fork Coal Co. (No. 1)	Beckley	4.9	1	A. R.	2.22	18.21	77.23	2.34	0.54	4.54	86.47	1.51	4.60	15,017	.....	12.46
431	Slab Fork Coal Co. (No. 4)	Beckley	3.8	1	A. R.	2.87	17.77	76.44	2.92	0.48	4.65	84.95	1.49	5.51	14,855	.....	10.07
51	Winding Gulf Coll. Co. (No. 1)	Beckley	4.2	3	A. R.	2.17	17.39	77.77	2.67	0.50	4.69	86.28	1.51	4.35	14,987	.....	12.29
52	Winding Gulf Coll. Co. (No. 2)	Beckley	4.3	2	A. R.	2.83	17.73	75.23	4.21	0.81	4.56	84.03	1.53	4.86	14,558	.....	9.26
54	Lynwinn Coal Co. (No. 2)	Beckley	4.7	5	A. R.	2.20	17.23	77.05	3.52	0.59	4.61	84.87	1.58	4.83	14,738	.....	10.16
56	McAlpin Coal Co.	Beckley	4.8	8	A. R.	3.53	14.36	77.34	4.77	0.92	4.89	82.67	1.39	5.36	14,449	.....	8.16
59	Blue Jay Lumber Co. (Blue Jay)	Beckley	4.7	3	A. R.	3.29	18.96	73.46	4.29	0.74	4.78	82.96	1.61	5.62	14,519	.....	8.37
59?	Blue Jay Lumber Co. (Blue Jay No. 4)	Beckley	4.3	3	A. R.	3.66	14.36	77.37	4.61	0.82	.....	.....	.....	.....	.....	.....	.....
60	Sullivan Coal Co. (North)	Beckley	4.9	1	A. R.	3.38	13.65	77.19	5.78	1.08	.....	.....	.....	.....	.....	.....	.....
61	Sullivan Coal Co. (South)	Beckley	4.1	1	A. R.	0.87	14.41	79.29	5.43	1.02	4.74	84.61	1.43	2.77	14,686	.....	10.32
60-1	Sullivan Coal Co. (N. & S.)	Beckley	4.5	2	A. D.												

Table of Coal Analyses by U. S. Geological Survey and U. S. Bureau of Mines.

No. on Map II.	MINE.	Coal Bed	Average Thickness of Coal—Feet	No. of Samples Mixed to Make Composite Sample	Condition of Sample	PROXIMATE			Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
						Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen			
60-1	Sullivan Coal Co. (N. & S.)	Beckley	4.5	2	A. R.	3.55	14.02	77.15	5.28	0.99	4.91	82.33	1.39	5.10	14,290	14,663	7.93
	Average	Beckley	....	....	A. D.	0.80	14.91	79.68	4.61	0.76	4.73	85.13	1.46	3.31	14,921	.....	10.91
	Average	Beckley	....	....	A. R.	3.21	15.96	76.33	4.50	0.71	4.78	83.22	1.48	5.35	14 998	14,674	8.72
62	Stonewall C. & C. Co. (Terry)	Fire Creek	3.3	3	A. D.	0.97	16.28	77.40	5.35	0.65	4.72	84.07	1.46	3.75	14,774	.....	9.13
62	Stonewall C. & C. Co. (Terry)	Fire Creek	3.3	3	A. R.	2.75	15.99	76.01	5.25	0.64	4.84	82.56	1.43	5.28	14,508	14,627	7.84
63	Stonewall C. & C. Co. (No. 2) aban'd.	Fire Creek	2.8	1	A. D.	0.84	16.42	80.52	2.22	0.82	4.89	86.93	1.43	3.71	15,338	.....	14.66
63	Stonewall C. & C. Co. (No. 2) aban'd.	Fire Creek	2.8	1	A. R.	3.02	16.06	78.75	2.17	0.80	5.02	85.02	1.40	5.59	15,001	15,077	10.95
	Average	Fire Creek	....	....	A. D.	0.90	16.35	78.96	3.79	0.73	4.80	85.50	1.45	3.73	15,056	.....	11.89
	Average	Fire Creek	....	....	A. R.	2.89	16.02	77.38	3.71	0.72	4.93	83.79	1.41	5.44	14,755	14,852	9.44
78	Weyanoke C. & C. Co. (Nos. 1 & 2)	No. 3 Pocahontas	4.0	5	A. R.	2.97	17.72	75.68	3.63	0.65	4.52	85.26	1.16	4.78	14,701	.....	10.14
81	Sagamore Colliery Co. (No. 1)	No. 3 Pocahontas	4.9	1	A. R.	3.53	18.20	74.99	3.28	0.54	.....	.....	.....	.....	.....	.....	.....
82	Sagamore Colliery Co. (No. 1)	No. 3 Pocahontas	4.5	1	A. R.	3.11	18.18	73.38	5.33	0.56	.....	.....	.....	.....	.....	.....	.....
81-2	Sagamore Colliery Co. (Nos. 1 & 2)	No. 3 Pocahontas	4.3	7	A. R.	3.16	18.17	74.69	3.98	0.56	4.60	84.13	1.17	5.56	14,639	.....	8.82
83	Crane Creek C. & C. Co. (Nos. 1 & 2)	No. 3 Pocahontas	4.3	5	A. R.	3.43	16.01	76.24	4.32	0.55	4.72	83.75	1.08	5.58	14,584	.....	8.46
83	Crane Creek C. & C. Co. (No. 1)	No. 3 Pocahontas	4.9	1	A. R.	2.30	18.00	73.30	6.40	0.60	.....	.....	.....	.....	14,360	.....	.....
83	Crane Creek C. & C. Co. (No. 2)	No. 3 Pocahontas	4.4	1	A. R.	3.30	17.50	73.70	5.50	0.55	.....	.....	.....	.....	14,340	.....	.....
84	Buckeye C. & C. Co. (Buckeye)	No. 3 Pocahontas	5.6	6	A. D.	0.50	14.00	82.00	3.46	0.83	4.55	85.58	1.15	4.43	15,190	.....	10.84
84	Buckeye C. & C. Co. (Buckeye)	No. 3 Pocahontas	5.6	6	A. R.	3.80	13.50	79.40	3.34	0.80	4.78	82.67	1.11	7.30	14,670	14,450	7.77
85	Booth-Bowen C. & C. Co.	No. 3 Pocahontas	4.8	3	A. D.	0.60	14.00	81.10	4.25	0.57	4.42	85.77	1.12	3.87	14,980	.....	10.56
85	Booth-Bowen C. & C. Co.	No. 3 Pocahontas	4.8	3	A. R.	3.40	13.50	79.00	4.13	0.55	4.61	83.28	1.09	6.34	14,540	14 500	7.95
85	Booth-Bowen C. & C. Co.	No. 3 Pocahontas	7.4	3	A. D.	0.60	14.50	81.10	3.78	0.59	4.52	86.75	1.16	3.21	15,080	.....	12.41
85	Booth-Bowen C. & C. Co.	No. 3 Pocahontas	7.4	3	A. R.	2.80	14.00	79.50	3.70	0.57	4.66	84.84	1.13	5.10	14,740	14,860	9.64
86	Caswell Creek Coll. Co. (C.-Elkhorn)	No. 3 Pocahontas	6.9	4	A. D.	0.70	15.00	80.60	3.69	0.72	4.40	87.58	1.20	2.41	15,120	.....	14.36
86	Caswell Creek Coll. Co. (C.-Elkhorn)	No. 3 Pocahontas	6.9	4	A. R.	3.60	14.50	78.30	3.58	0.70	4.60	84.96	1.16	5.01	14,670	14,650	9.89
86	Caswell Creek Coll. Co. (C.-Hemlock)	No. 3 Pocahontas	7.3	3	A. D.	0.70	15.50	79.50	4.26	0.76	4.57	84.34	1.15	4.92	15,040	.....	9.19
86	Caswell Creek Coll. Co. (C.-Hemlock)	No. 3 Pocahontas	7.3	3	A. R.	4.40	15.00	76.50	4.10	0.73	4.82	81.14	1.11	8.10	14,470	14,190	6.65
88	Louisville C. & C. Co. (No. 2)	No. 3 Pocahontas	4.5	3	A. D.	0.70	14.50	81.00	3.76	0.54	4.52	86.45	1.12	3.61	15,160	.....	11.73
88	Louisville C. & C. Co. (No. 2)	No. 3 Pocahontas	4.5	3	A. R.	2.90	14.00	79.40	3.68	0.53	4.66	84.55	1.10	5.48	14.830	14,780	9.23

Table of Coal Analyses by U. S. Geological Survey and U. S. Bureau of Mines.

No. on Map II.	MINE.	Coal Bed	Average Thickness of Coal—Feet	No. of Samples Mixed to Make Composite Sample	Condition of Sample	PROXIMATE			Common to Both		ULTIMATE				Calorimeter B. T. U. for 1 Lb. of Coal	Calculated B. T. U. for 1 Lb. of Coal	Carbon Divided by Oxygen + Ash
						Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Hydrogen	Carbon	Nitrogen	Oxygen			
88	Louisville C. & C. Co. (No. 2).....	No. 3 Pocahontas.	4.3	2	A. D.	0.70	14.50	81.30	3.54	0.57	4.54	86.82	1.15	3.38	15,200	.....	12.55
88	Louisville C. & C. Co. (No. 2).....	No. 3 Pocahontas.	4.3	2	A. R.	3.00	14.00	79.50	3.46	0.56	4.70	84.82	1.12	5.34	14,850	14,860	9.64
88	Louisville C. & C. Co. (No. 2).....	No. 3 Pocahontas.	4.4	1	A. R.	2.92	18.75	75.35	2.98	0.56	.....	.....	.....	.....	.....	.....	.....
89	Louisville C. & C. Co. (No. 3).....	No. 3 Pocahontas.	5.1	1	A. D.	0.70	14.00	81.90	3.41	0.55	4.48	87.34	1.08	3.14	15,200	.....	13.33
89	Louisville C. & C. Co. (No. 3).....	No. 3 Pocahontas.	5.1	1	A. R.	3.30	13.50	79.90	3.32	0.54	4.65	85.06	1.05	5.38	14,810	14,860	9.78
89	Louisville C. & C. Co. (Nos. 1, 2, & 3).	No. 3 Pocahontas.	4.4	7	A. R.	3.30	18.58	74.45	3.67	0.56	4.56	84.83	1.16	5.22	14,653	.....	9.54
90	Louisville C. & C. Co. (No. 1).....	No. 3 Pocahontas.	4.4	1	A. R.	3.11	19.30	74.27	3.32	0.57	.....	.....	.....	.....	.....	.....	.....
93	Godfrey Coal Co. (Godfrey).....	No. 3 Pocahontas.	4.0	2	A. R.	3.06	18.24	74.84	3.86	0.71	4.74	84.32	1.12	5.25	14 688	.....	9.25
94	Pawama Coal Co. (No. 1).....	No. 3 Pocahontas.	4.0	2	A. R.	3.16	16.98	76.21	3.65	0.71	4.64	84.79	1.15	5.06	14,729	.....	9.74
94	Pawama Coal Co. (No. 2).....	No. 3 Pocahontas.	4.1	3	A. R.	3.61	17.41	74.84	4.14	0.76	4.57	83.68	1.12	5.73	14,587	.....	8.48
.....	Coaldale C. & C. Co. (Coaldale).....	No. 3 Pocahontas.	9.5	5	A. D.	0.75	14.98	80.06	4.21	0.69	4.61	86.11	1.09	3.29	15,007	.....	11.48
.....	Coaldale C. & C. Co. (Coaldale).....	No. 3 Pocahontas.	9.5	5	A. R.	3.43	14.58	77.89	4.10	0.67	4.79	83.79	1.06	5.59	14,602	14,751	8.65
.....	Goodwill C. & C. Co. (Goodwill).....	No. 3 Pocahontas.	4.3	2	A. D.	0.90	16.00	79.20	3.86	0.57	4.56	86.93	1.05	3.03	15,070	.....	12.62
.....	Goodwill C. & C. Co. (Goodwill).....	No. 3 Pocahontas.	4.3	2	A. R.	3.10	15.50	77.60	3.77	0.56	4.72	84.93	1.03	4.99	14,720	14,920	9.69
.....	Mill Creek C. & C. Co., (West Mill Creek)	No. 3 Pocahontas.	9.0	3	A. D.	0.62	16.11	78.53	4.74	0.85	4.66	85.17	1.13	3.45	14,895	.....	10.40
.....	Mill Creek C. & C. Co., (West Mill Creek)	No. 3 Pocahontas.	9.0	3	A. R.	3.20	15.69	76.49	4.62	0.83	4.83	82.96	1.10	5.66	14,508	14,656	8.07
.....	Mill Creek C. & C. Co., (East Mill Creek)	No. 3 Pocahontas.	8.9	1	A. D.	0.70	15.89	79.26	4.15	0.87	4.49	86.73	1.19	2.57	15,080	.....	12.91
.....	Mill Creek C. & C. Co., (East Mill Creek)	No. 3 Pocahontas.	8.9	1	A. R.	3.78	15.40	76.80	4.02	0.84	4.69	84.04	1.15	5.26	14,612	14,756	9.05
.....	Spring C. M. Co. (Spring).....	No. 3 Pocahontas.	4.5	5	A. D.	0.86	12.61	81.71	4.82	0.60	4.59	86.97	0.99	2.03	14,888	.....	12.69
.....	Spring C. M. Co. (Spring).....	No. 3 Pocahontas.	4.5	5	A. R.	3.24	12.31	79.75	4.70	0.59	4.75	84.88	0.97	4.11	14,530	14,999	9.66
72A	Turkey Gap C. & C. Co. (Wenonah)....	No. 3 Pocahontas.	3.5	4	A. D.	0.70	13.56	81.47	4.27	0.58	4.72	86.09	1.10	3.24	15,034	.....	11.47
72A	Turkey Gap C. & C. Co. (Wenonah)....	No. 3 Pocahontas.	3.5	4	A. R.	3.58	13.17	79.10	4.15	0.56	4.90	83.59	1.07	5.73	14,598	14,773	8.46
75	Ennis Coal Co. (Hiawatha).....	No. 3 Pocahontas.	5.3	4	A. D.	0.73	13.27	80.43	5.57	0.66	4.42	85.16	1.13	3.06	14 791	.....	9.87
75	Ennis Coal Co. (Hiawatha).....	No. 3 Pocahontas.	5.3	4	A. R.	3.41	12.91	78.26	5.42	0.64	4.60	82.86	1.10	5.38	14,391	14,515	7.67
.....	Goodwill C. & C. Co. (Goodwill).....	No. 3 Pocahontas.	4.2	4	A. R.	3.19	19.14	74.36	3.31	0.56	4.60	85.16	1.10	5.27	14,715	.....	9.92
.....	——(Pinnacle)	No. 3 Pocahontas.	4.0	1	A. R.	2.40	18.10	76.30	3.20	0.55	.....	.....	.....	.....	14,870	.....	.....
.....	——(Pinnacle)	No. 3 Pocahontas.	4.0	5	A. R.	3.40	16.16	76.99	3.45	0.51	4.86	85.04	1.09	5.05	14,697	.....	10.00
.....	Piedmont Coll. Co. (Piedmont).....	No. 3 Pocahontas.	4.1	4	A. R.	3.37	15.65	75.49	5.49	0.54	4.70	82.95	1.15	5.17	14,371	.....	7.78
	Average	No. 3 Pocahontas.	....	....	A. D.	0.70	14.56	80.61	4.13	0.66	4.54	86.24	1.12	3.31	15,049	.....	11.76
	Average	No. 3 Pocahontas.	....	....	A. R.	3.26	16.05	76.64	4.05	0.62	4.69	84.08	1.10	5.50	14,626	14,701	8.96

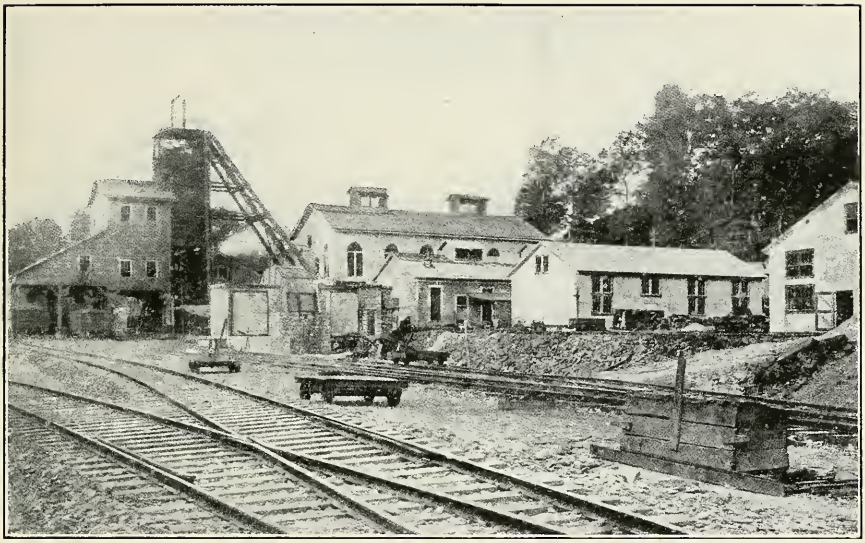

PLATE XXIX(a).—Mines Nos. 3 and 4 of New River Collieries Co. at Eccles.

PLATE XXIX(b).—Mine No. 6 of New River Collieries Co. at Eccles.

Table Showing Location of Mines Sampled by U. S. Geological Survey and U. S. Bureau of Mines Listed in Preceding Table.

No. on Map II.	Location of Mine.	Page of this Report	References to other Reports. Bull. 2=W. Va. Geol. Sur. Bull. 22 and 85=U. S. B M.
	Sewell Coal:		
7	Price Hill	490	Bull. 2, p. 244, No. 12
8	Price Hill, 1.0 mi. S	490	Bull. 2, p. 245, No. 34
9	Tamroy	491	Bull. 2, p. 242, No. 1
10	Price Hill, 2.6 mi. S	491-2	Bull. 2, p. 242, No. 18
13	Beckley, 3.2 mi. N. W	494	Bull. 2, p. 242, No. 32
14	Beckley, 2.9 mi. N. W	494	Bull. 22, p. 285
16	Beckley, 0.6 mi. N	495	Bull. 2, p. 242, No. 25
18	Lanark, 0.6 mi. N. W	495-6	Bull. 2, p. 242, No. 3
18	Lanark, 0.6 mi. N. W	495-6	Bull. 2, p. 242, No. 2
20	Riley	496	Bull. 2, p. 242, No. 24
21	Mabscott, 0.6 mi. N	498	Bull. 2, p. 242, No. 30
22	Mabscott	498	Bull. 22, p. 284
24	Wickham	499	Bull. 22, p. 284
25	Eccles	502	Bull. 22, p. 285
	Beckley Coal:		
27	Raleigh, 1.0 mi. N. W	509-10	Bull. 2, p. 236, No. 19
27	Raleigh, 1.0 mi. N. W	509-10	Bull. 22, p. 292
27	Raleigh, 1.0 mi. N. W	509-10	Bull. 85, p. 128
28	Raleigh, 1.1 mi. N. W	510	Bull. 2, p. 236, No. 20
29	Raleigh	511	Bull. 2, p. 236, No. 26
29	Raleigh	511	Bull. 85, p. 128
30	Raleigh, 1.0 mi. S. W	511	Bull. 2, p. 236, No. 25
31	Stanaford, Near	511-12	Bull. 22, p. 289
31	Stanaford, Near	511-12	Bull. 2, p. 237, No. 27
32	Stanaford, Near	512	Bull. 2, p. 237, No. 28
33	Riley, 1.0 mi. E	512-13	Bull. 2, p. 237, No. 29
36	Affinity	514	Bull. 22, p. 289
37	Hotcoal, 0.3 mi. W	514	Bull. 85, p. 127
40	Glen White	515	Bull. 2, p. 214, No. 16
40	Glen White	515	Bull. 22, p. 285
45	Slab Fork, 0.5 mi. E	518	Bull. 85, p. 129
45	Slab Fork, 0.5 mi. E	518	Bull. 2, p. 236, No. 24
46	Slab Fork, 0.6 mi. E	518-20	Bull. 22, p. 289
46	Slab Fork, 0.6 mi. E	518-20	Bull. 85, p. 129
47	Slab Fork	520	Bull, 85, p. 129
50	Slab Fork, 0.4 mi. E	521	Bull. 2, p. 236, No. 23
50	Slab Fork, 0.4 mi. E	521	Bull. 2, p. 236, No. 22
50	Slab Fork, 0.4 mi. E	521	Bull. 85, p. 129
431	Slab Fork Station, East of	529	Bull. 85, p. 129
51	Winding Gulf, 0.6 mi. S. E	522	Bull. 85, p. 131
52	Winding Gulf, 0.6 mi. N. W	522-3	Bull. 85, p. 131
54	Lynwinn	523	Bull. 85, p. 130
56	McAlpin	524	Bull. 85, p. 131
59	Glen Morgan, 0.6 mi. E	532	Bull. 22, p. 289
59?	Glen Morgan, 0.6 mi. E	532	Bull. 85, p. 128
60	Sullivan	532	Bull. 22, p. 291

Table Showing Location of Mines Sampled by U. S. Geological Survey and U. S. Bureau of Mines Listed in Preceding Table.

No. on Map II.	Location of Mine.	Page of this Report	References to other Reports. Bull. 2=W. Va. Geol. Sur. Bull. 22 and 85=U. S. B. M.
61	Sullivan, South of	533	Bull. 22, p. 291
60-61	Sullivan	532-3	Bull. 2, p. 236
	Fire Creek Coal:		
62	Terry, 0.4 mi. S.	542-3	Bull. 2, p. 235, No. 6
63	Stonewall	543	Bull. 2, p. 235, No. 7
	No. 3 Pocahontas Coal:		
78	Weyanoke	607	Bull. 85, p. 126
81	Mannering, 0.7 mi. S.	609-10	Bull. 85, p. 125
82	Mannering, 0.5 mi. S.	610	Bull. 85, p. 125
81-82	Mannering, 0.5 mi. S.	609-10	Bull. 85, p. 125
83	Mannering, 0.5 mi. E.	610	Bull. 22, p. 276
83	Mannering, 0.5 mi. E.	610	Bull. 85, p. 124
84	Simmons, 1.6 mi. N. W.	611	Bull. 2, p. 213, No. 5
85	Simmons, 2.3 mi. N. W.	612	Bull. 2, p. 213, No. 3
85	Simmons, 2.3 mi. N. W.	612	Bull. 2, p. 213, No. 4
86	Simmons, 1.8 mi. N. W.	612	Bull. 2, p. 213, No. 6
86	Simmons, 1.8 mi. N. W.	612	Bull. 2, p. 213, No. 7
88	Goodwill, 0.8 mi. N. W.	615	Bull. 2, p. 216, No. 56
88	Goodwill, 0.8 mi. N. W.	615	Bull. 2, p. 216, No. 57
88	Goodwill, 0.8 mi. N. W.	615	Bull. 85, p. 123
89	Goodwill, 1.1 mi. N. W.	615	Bull. 2, p. 216, No. 58
89	Goodwill, 1.1 mi. N. W.	615	Bull. 85, p. 123
90	Goodwill, 0.7 mi. N.	616	Bull. 85, p. 123
93	Godfrey	617	Bull. 85, p. 122
94	Matoaka, 1.0 mi. S. W.	620-1	Bull. 85, p. 123
94	Matoaka, 1.0 mi. S. W.	620-1	Bull. 85, p. 124
.....	Coaldale Mine	.....	Bull. 2, p. 213, No. 9
.....	Goodwill Mine	.....	Bull. 2, p. 214, No. 17
.....	West Mill Creek Mine	.....	Bull. 2, p. 214, No. 24
.....	East Mill Creek Mine	.....	Bull. 2, p. 214, No. 25
.....	Spring Mine	.....	Bull. 2, p. 215, No. 36
72A	Wenonah Mine	605	Bull. 2, p. 215, No. 40
75	Hiawatha Mine	606	Bull. 2, p. 216, No. 49
.....	Goodwill Mine	.....	Bull. 85, p. 122
.....	Pinnacle Mine	.....	Bull. 85, p. 125
.....	Pinnacle Mine	.....	Bull. 22, p. 276
.....	Piedmont Mine	.....	Bull. 22, p. 279

CHAPTER IX

CLAY, ROAD MATERIAL, BUILDING STONE, WATER POWER, MINERAL SPRINGS AND FORESTS.

CLAYS AND CLAY INDUSTRY.

PRESENT DEVELOPMENT.

No brick plants have been developed in Raleigh County at present, 1914, nor were any plants observed in Mercer and Summers Counties.

AVAILABLE CLAY.

Transported Clay.

In Raleigh and Summers Counties, along the flood plains of New River and Guyandot River, there is a large amount of clay and sand carried to its present position by the erosive work of the rivers and their tributaries. No attempt has been made to study these deposits in detail, but reference is made to Map II, on which are shown in yellow the alluvial soils. These deposits are principally sand and boulders owing to the fact that they are derived principally from the New River and Pocahontas Groups, and there is a possibility that in many places these deposits will be found thin and lacking in the proper amount of aluminous matter necessary for brick making, or where these deposits are derived from the Mauch Chunk Shales, there may be too much lime for good brick, and hence it is necessary that careful investigation should be made before final arrangements are made for the construction of plants.

Residual Clay.

The clay which is derived from rocks weathered in place and not transported from its original location, called residual clay, is found in several parts of Raleigh County. This clay is formed from the rocks of the Kanawha and New River Groups in the northern part of Raleigh County, in Marsh Fork, Trap Hill and Town Districts. It is very sandy and silicious and does not contain enough aluminous matter for cementing, and this makes a very poor brick. The same conditions exist with the residual clays in Shady Spring District.

Stratified Shales.

There are numbers of Stratified Shales lying between the large ledges of the Kanawha, New River and Pocahontas Groups in the three counties. The most of these shales contain too much silicious matter and too small a percentage of alumina to be available for the manufacture of brick or tile.

Fire Clay.

The Pottsville Series, forming much the larger area of the surface rocks of Raleigh, Mercer and Summers Counties, does not carry fire clays of thickness and purity to be of commercial value; and there are no fire clays in the Mauch Chunk Series.

ROAD MATERIAL.

RIVER AND CREEK GRAVEL.

There occurs along most of the streams in the three counties a large amount of coarse gravel and sand, that can be utilized for road building. The availability of these deposits, as road material, has been frequently dwelt upon in previous County Reports of the Survey.

LIMESTONE.

There is no limestone in the Pottsville Series suitable for road building, but the Mauch Chunk Shales have several beds of limestone. No detailed study was made of these beds, and hence they can not be described in this Report, but will be taken up when the rest of Summers County is surveyed.

BUILDING STONE.

The sandstones of the Kanawha, New River and Pocahontas Groups, in the counties described in this Report, are nearly all of the same type; that is, massive, gray, micaceous, medium hard, medium coarse and very much current bedded. Most of these are well suited for rough stone walls, bridge piers, etc., but not well adapted for ornamental or architectural work, as they are hard and have not the texture to take carving and polishing. The uses of these sandstones are purely local, and no commercial quarries can be developed thereon to be run on an economic basis.

WATER POWER.

Considerable interest has been taken in the past few years to utilize the fall of the streams in the western part of Raleigh and Summers Counties. Surveys have been made for several hydro-electric power plants, and locations projected along Bluestone and New Rivers. A plant has been in operation about 20 years at Kanawha Falls, in Fayette County, and the water power converted into electric power and used for manufacturing purposes.

The following table shows the indicated horse-power developed by Bluestone and New Rivers and their tributaries in Raleigh, Mercer and Summers Counties, compiled from Tables 2 and 10, pages 399 and 412, of the Semi-Centennial History of West Virginia by Dr. J. M. Callahan, the table in question being part of a special article on "Water Power Resources" by A. H. Horton, District Engineer, Water Resources Branch, U. S. Geological Survey:

Table No. 2—Indicated Horse-power Developed by New-Kanawha River in West Virginia.

Section of River.		Length, Miles.	Mean Drainage Area, Sq. Miles.	Minimum Discharge Sec. Feet.	Assumed Discharge For Maximum Development—Sec. Feet.	Total Fall in Feet.	Minimum Horse-power.	Assumed Maximum Development. Horse-power.	Horse-power Available from storage for		
From	To								12 Mos.	6 Mos.	3 Mos.
Below Island Creek	Above Greenbrier R.	20	4,220	1,990	3,810	77	14,000	26,000			
Below Greenbrier R.	1200 ft. Contour	20	6,300	2,140	5,000	182	35,900	84,000	3,480	6,960	13,920
1200 ft. Contour	1000 ft. Contour	24	6,560	2,230	5,200	200	41,000	95,600	3,830	7,660	15,320
1000 ft. Contour	Above Gauley R.	19	6,780	2,300	5,380	351	74,300	174,000	6,730	13,460	26,920
Below Gauley R.	Foot Loup Cr. Shoals	9	8,310	2,550	6,440	51	12,000	30,300	16,700	33,400	66,800
Foot Loup Cr. Shoals	Ohio R. Backwater	71	10,100	2,730	7,690	76	19,000	53,600	24,900	49,800	99,600
Totals		163				937	196,200	464,300	55,640	111,280	222,560

Table No. 10—Indicated Horse-power Developed by the Minor Tributaries of the New-Kanawha River.

Stream.	Section.		Length in Miles.	Total Drainage Area, Sq. Mi.	Minimum Discharge—Sec. Ft.	Assumed Discharge for Maximum Development—Sec. Ft.	Total Fall, Feet.	Maximum Horse-power.	Assumed Maximum Development. Horse-power.
	From	To							
East River	Source	Mouth	24	79	17	50	1,100	430	1,260
Indian Creek	Source	Mouth	34	180	40	113	1,000	920	2,600
Bluestone R.	Source	Below Mill Cr.	23	111	33	56	1,100	836	1,420
Bluestone R.	Below Mill Cr.	Above Brush Cr.	50	a196	38	88	560	2,010	4,530
Bluestone R.	Below Brush Cr.	Mouth	11	a405	35	146	450	1,450	6,040
Brush Cr.	Source	Mouth	22	69	5.9	25	1,000	136	575
Piney Cr.	Source	Mouth	30	132	29	83	1,700	1,130	3,240
Totals								6,912	19,665

a—Mean Area.

MINERAL SPRINGS.

There are a number of mineral springs in Mercer and Summers Counties, where the water is utilized for medicinal purposes. These springs are all located to the east of the area studied, and will not be discussed in this Report. No mineral springs have been explored in Raleigh County, and, so far as known, none of value exist.

FORESTS.

RALEIGH COUNTY.

In Volume V, pages 256-261 of the State Survey Reports, by A. B. Brooks, State Forester, a description is given of the forests of Raleigh County that contains so much interesting information that most of it is herewith republished:

"The Former Forest Conditions.

"This county, with its greatly diversified surface, has been and is still the natural home of many species of valuable timber trees. White pine once grew in abundance on about 50,000 acres lying at an elevation of from 2,500 to 3,000 feet on the waters of Glade Creek and Piney Creek. This area, with its extension into Mercer County, formed one of the three principal bodies of white pine to be found within the State. Outside of the white pine belt, hemlock is the only softwood growing in large quantities. Yellow poplar and the oaks, principally white oak, are the most abundant of the valuable hardwoods. Percentages of the principal timbers growing on two widely separated virgin tracts will show to what extent the quantity of species varies in the different localities. The timber on a 30,000 acre tract on the waters of Big Coal River stands, approximately, as follows:

Yellow Poplar	60 per cent.
White Oak	10 per cent.
Red Oak, Black Oak, Chestnut Oak	10 per cent.
Chestnut, Maples, White Ash, Beech, Hemlock, Birch, Sweet Buckeye, Hickory and others	20 per cent.

"The percentages of species on an 18,000 acre tract on waters of Guyandot River are as follows:

Yellow Poplar	35 per cent.
White Oak	20 per cent.
Red Oak, Black Oak, Chestnut Oak	15 per cent.
Hemlock	10 per cent.
Chestnut, Beech, Hickory, Maples, Sweet Buckeye, Basswood, Cucumber, and others	20 per cent.

"The Early Lumber Industry.

"Little can be said concerning the early cutting of lumber in Raleigh County. The first lumber, sawed by hand and on 3 or 4 rude water saw mills, was used by the comparatively few early settlers for domestic purposes. Not until 10 years or more after the close of the Civil War were portable steam saw mills put into operation in the county. These, for a number of years, sawed but little. From about 1888, however, numerous mills of all sizes have been brought in. A few of these are named below:

"Beatty Lumber Company, with a circular mill, cut white pine near Crow on Beaver Creek and Glade Creek and trammed it to the Chesapeake and Ohio Railroad at the mouth of Glade Creek.

"Interstate Lumber Company, with circular mills, cut a large area on the land of Maple Meadow Branch of Marsh Fork.

"Marsh Lumber Company has operated several circular mills on Marsh Fork of Big Coal River, cutting over a large area in that section.

"George Bair operated a circular mill on Piney Creek and on Marsh Fork waters.

"J. B. Earwood has been cutting on Piney Creek near Beckley.

"Raleigh Lumber Company, with a large band mill near Beckley, operated from 1898 to 1907. At that time the mill went into the hands of the W. M. Ritter Lumber Company which has since been running it.

"The Blue Jay Lumber Company, with a band mill, has cut over a large area of white pine and hemlock on Piney Creek and on Beaver and Glade Creeks.

"The American Column and Lumber Company, with a band mill at Colcord, has been cutting on Clear Fork of Big Coal River.

"The Bowman Lumber Company, with a band mill at St. Albans in Kanawha County, has been engaged in removing timber from a 60,000 acre tract in Raleigh and Boone Counties.

"Many of the owners of small mills who operated in the county several years ago met with only indifferent success and often failure. Mills were brought in and erected at great expense and the lumber frequently had to be hauled on wagons a distance of 20 or 25 miles to the railroad. To this excessive cost of manufacture and the lack of proper shipping facilities are attributable, chiefly, the results to operators mentioned above.

"The principal shipping points for lumber have been Prince, Macdonald and Raleigh, at first, and later the various stations along the Virginian Railroad, and Surveyor on the Chesapeake and Ohio Railroad.

"Most of the large streams of Raleigh are too rough and rapid for the rafting or drifting of logs. A few were drifted out, however, on the Coal River waters, 20 years ago or more and a few at the same time on the waters of Paint Creek.

"The Present Lumber Industry.

"With the completion of the Virginian Railroad through the county in 1907, and with the extension of the Chesapeake and Ohio Branch to Lester in the same year, the lumber industry was greatly increased. These railroads with another branch of the Chesapeake and Ohio now being built from Pemberton down the Winding Gulf Branch of Guyandot River, have entered the chief timber belt of the county. A band mill erected at Maben in Wyoming County in 1907 and the one at St. Albans, mentioned above, are drawing their supply of logs from Raleigh County. These mills, including 3 band mills and numerous smaller mills now in operation, are making great inroads on the virgin forests. The combined capacity of all mills is not less than 60 million feet per year. If the cutting at this rate is continued for a few years the virgin areas will be cut over and the farmers' woodlots and the sparsely timbered areas ransacked for every valuable tree.

"The Present Forest Conditions.

"From the information obtainable in the short time allotted for investigation in this county, 117,600 acres are yet in virgin forest, 112,500 acres are cut-over forest and the remaining 128,300 acres are cleared and woodlot lands belonging to farmers and other small owners. The virgin lands lie chiefly on the head waters of Piney Creek and on the waters of Guyandot in the southern part of the county, and on the waters of Big Coal River in the western part. Smaller areas are found in other places. The cut-over lands lie chiefly in the eastern part of the county. Large tracts are to be found, however, in the south-central, western and northwestern sections.

"All the white pine has been taken out except an area of about 2,000 acres on Piney Creek, now being vigorously cut, and a very small area lying near to Beckley, the county seat. The parts of the white pine belt not frequently visited by fire are restocking with a good stand of young trees. On most of this area, however, especially south of Piney Creek, recent fires have killed all the young white pines that had made a start.

"Forest fires, in general, have been most destructive on Beaver and Glade Creeks and Piney Creek and on Clear Fork of Big Coal River. These burnt areas have only a meager growth of valuable young trees. Other cut-over lands have from 1,000 to 2,000 feet of merchantable timber per acre and a fairly good stand of young hardwoods."

MERCER COUNTY.

In Volume V, pages 197-202 of the State Survey Reports, there is a description of the forests of Mercer County, a portion of which is republished here in the following paragraphs:

"The Original Forests.

"There is little left to show the character of the original forests of the southern half of the county. But, judging from the few isolated areas of virgin forest still left, and from the statements of old residents in that section, it is certain that the region once abounded in the choicest of hardwoods. The limestone land, especially, in East River and Beaver Pond Districts, produced large numbers of excellent white oaks, yellow poplars and others, usually associated with them. On the high crests of East River Mountain and on Stony and Redoak Ridges, such timbers as chestnut oak, small white oak, basswood and pitch pine predominated. The softwoods of the southern half of the county were white and pitch pine and hemlock. These, however, have not grown there in large numbers.

"The northern half of the county has produced not only the hardwoods common to this section of the State but large quantities of softwood as well. Of the softwoods white pine and hemlock have been the chief valuable species. The white pine belt lies along the southeastern side of Bluestone River from a point about 2 miles above Spanishburg to near the mouth of the river in Summers County. Northwestward from the Bluestone there is a scattered growth of white pine which joins the white pine area of Raleigh County. Below are given the approximate percentages of timbers growing on an 8,000 acre virgin tract in the white pine belt:

White Pine	60 per cent.
White Oak	25 per cent.
Hemlock	5 per cent.
Yellow Poplar	5 per cent.
Chestnut	5 per cent.
Hickory and others	

"The Lumber Industry.

"Most of the timber has been cut in the southern part of the county by a large number of portable mills. These began to operate about the year 1882 when the Norfolk and Western Railroad was built, and have continued to the present. A few mills were running before that date but their small output was used for domestic purposes. As late as 1897 there were but 2 saw mills running in Rock District and not a stave had been cut along the Bluestone River. A little timber was taken from the northern end of the county by the William James Sons Company and sawed at Hinton about 1880; but active operations have continued for only the past 13 years. The L. B. Farley and the Beckwith stave mills, with the help of 2 or 3 smaller mills, have cut not fewer than 50,000,000 staves since 1897. The best of the white oak in Rock District, and some in Plymouth and Jumping Branch Districts, has been manufactured into staves. The streams of the county will not admit of extensive rafting or

drifting and, up to 1908, no lumber had been sawed for commercial purposes except by portable mills.

"The cross-tie industry has been large during the past few years especially along the railroads.

"Two shingle mills manufactured white pine shingles in Plymouth District from 1902 to 1908.

"Estimating from the large number of saw and stave mills in the county, the remnant of timber will soon be cut. There are now 35 portable saw and stave mills and 1 band mill in operation. These have a combined capacity of about 230,000 feet per day or over 70 million feet per year. The company owning the band mill has a supply of white pine and other timbers that will last for about 12 years. Before the expiration of that time the smaller mills will have cut all the available timber scattered in other parts of the county.

"The Present Forest Conditions.

"There are 18,700 acres of virgin forest remaining in the county, and 5,000 acres of cut-over forest. This lies almost entirely in Jumping Branch, Plymouth and Rock Districts on the waters of Bluestone River, Laurel Creek, Rich Creek, Wolf Creek and Camp Creek. There is but little in any other part of the county. The farmers of the southern districts have woodlots of considerable extent but with scarcely any merchantable timber. Those of the northern districts, in some cases, have a fairly good stand of valuable timber. The southern end of Rock District in the western part of the county is owned by coal companies which are already in need of more timber than their lands supply. Some companies owning timber now large enough for mine ties, are making purchases from the outside in order that their own may grow to maturity."

SUMMERS COUNTY.

A description is given in Volume V, pages 273-276, of the State Survey Reports, of the forests of Summers County, a portion of which is republished here as follows:

"Former Timber Conditions.

"According to Mr. J. C. James, a pioneer lumberman, the county was not as well timbered, originally, as some of the other interior counties of the State. It is fair to state, however, that prior to the beginning of any lumber operations, and before the area was visited by even the pioneer lumbermen, a large percentage of the rich land, where the best timber grew, had been cleared and the trees destroyed. Following are some of the timber trees mentioned by the older residents of Summers County:

White oak—The principal timber.
Chestnut oak—Common on dry ridges.
Poplar—Not generally abundant but good on Madam Creek and in some other localities.
Red oak—Common in rich ground.
Basswood—Common.

Buckeye—Common.
Walnut—Common.
Hickory—Common.
Ash—Common.
Cucumber—Not common.
Beech—Not common.
Birch—Not common.
Maples—Not common.
White pine—Small areas on Bluestone River.
Pitch pine—Occasionally seen on high ground.
Hemlock—Of good quality and common along streams.

"The Lumber Industry.

"The building of the Chesapeake and Ohio Railroad through the county in 1872 marked the beginning of an active lumber industry. 'Before that time,' says Judge James H. Miller, of Hinton, 'there had been no shipment of logs or sawed lumber—not even of walnut. All the trees that had been cut were either burned or made into fence rails, etc., by the pioneer farmers, or else manufactured by the rudest methods then employed into rough boards for domestic use.'

"A large quantity of the best oak has been manufactured into split and sawed staves. Most of these have been sold to the Standard Oil Company through Theodore Astor, their purchasing agent. The sawed stave industry began about the year 1873. In those days large numbers of staves were hauled in wagons from the stave saw mills, working back from the railroad, and shipped from the various stations. The Doan Cooperage Company manufactured staves for their own use for a few years. Three or four stave saw mills are still operating in a small way from place to place.

"Portable saw mills came in with the railroad and have been numerous for 35 years. The Wm. James Sons Company has had a large circular mill at Hinton since 1877. This mill has cut an immense quantity of timber from the Bluestone and from other waters. The only other important operation at Hinton was that of J. P. Mills who operated a small mill there for about 10 years.

"The Crosby-Beckley Lumber Company had a large circular saw mill on Lick Creek, and mills at other points, about 12 years ago.

"The walnut timber has been largely exported. Samuel Smith and C. A. Fredeking were two of the principal exporters, the former buying extensively in Green Sulphur District, and the latter buying from various localities and exporting to Germany.

"The present lumber industry consists, principally, of 1 large band saw operation at Glenray—running since 1905—1 large circular saw operation at Hinton, and of about 30 small lumber and stave operations scattered throughout the county. The smaller mills run irregularly, sawing small sets for farmers.

"Present Forest Conditions.

"There are about 3,800 acres of virgin forest remaining in the county. This lies in scattered areas of a few hundred acres each, principally on the waters of Bluestone River, in the southern part, and between Lick Creek and Meadow Creek on the north. One virgin area on the Bluestone, containing 200 acres, has about 60 per cent. of white pine. In all the others hardwoods of various kinds predominate.

"The cut-over forest lands comprise an area of about 7,800 acres.

The largest area contains 4,000 acres and lies on Greenbrier River waters in the eastern part of the county. The other cut-over lands are scattered, like the virgin areas, in the southwestern, western, and northern sections.

"Most of the land is owned by farmers who have an average of about 100 acres each. It is estimated that about 40 per cent. of all the farm land has been cleared. The wooded portions of the farms have, in most cases, been stripped of the best timber. A few remain that are exceptions to the general rule.

"The land unfit for agriculture is variously estimated at from 10 to 20 per cent."

Areas Suitable for Reforestation.

In Raleigh and Mercer Counties, there is quite an area of rough stony land along the streams that is too rough and rocky for farming. These lands are favorable to the reproduction of timber. Most of these lands are owned by large companies, so that the plan of reforestation is very simple. That is, a cooperative arrangement could be made by the land-holding companies, at a small expense to each one, to employ a force of rangers who would look after the protection of the young timber from forest fires, supervise the planting of new trees, when necessary, and direct the cutting of the mature timber. Such a policy should secure handsome returns from these waste lands, and would also aid in flood prevention and preserve the summer water supply, which would soon fail if the forests are destroyed and the hills denuded.

PART IV.

Paleontology.

CHAPTER X.

NOTES ON THE PALEONTOLOGY OF RALEIGH, WYOMING, McDOWELL AND ADJACENT COUNTIES.

Marine Invertebrates from the Pottsville Series.

By W. ARMSTRONG PRICE.

INTRODUCTION.

The following report upon the marine invertebrate fossils of the Pottsville Series treats, in particular, of the fossils of Raleigh, Wyoming and McDowell Counties with certain lots collected in the adjoining and neighboring counties of Boone, Fayette, Kanawha, Lincoln, Logan, Mercer and Mingo, of this State, and Buchanan County, Virginia. One specimen from the Conemaugh Series of Preston County is included because of its specific identity with a new species from the Kanawha Group of Raleigh County.

In selecting material for description from counties other than those with which the report chiefly deals it was our endeavor to so supplement previous studies of adjoining counties that the fauna of each fossiliferous horizon of the Pottsville now known should be represented by at least one good collection, described herewith or in other reports, and, where possible, to study collections from the locality which gave to the particular horizon its name. In addition are included specimens which had been prepared for previous reports, but whose relationships were not clear at the time of publication and which supplement our knowledge of the fauna of the Pottsville Series.

Finally, in the table showing the list of the invertebrate fossils of the Pottsville of West Virginia, published lists and de-

scriptions of species from other counties in the State have been used.

Acknowledgments.—Dr. G. H. Girty, of the U. S. Geological Survey, has been most generous in allowing the writer the frequent use of his specimens, catalogues and manuscript descriptions for comparison with his fossils and in giving him the benefit of his wide knowledge of Carboniferous species in the study of new forms. To Mr. Arthur W. Slocom of the Walker Museum, University of Chicago, for the loan of type material in his possession and to Messrs. E. O. Ulrich of the U. S. Geological Survey, R. S. Bassler of the U. S. National Museum and J. M. Clarke, State Paleontologist of New York, the writer is indebted for suggestions in regard to the boring sponge described below. Other acknowledgments will be found in the body of the report.

The accompanying map, Figure 10, shows the progress of the work of describing and illustrating the Pennsylvanian invertebrate fossils of West Virginia to the date of writing.

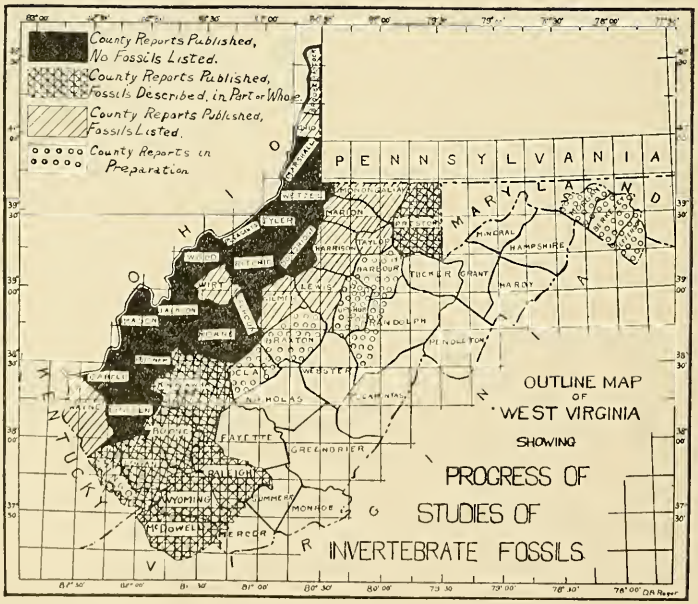

Figure 10.—Progress of Studies of Invertebrate Fossils.

FAUNAL HORIZONS.

The stratified rocks which outcrop in Raleigh, Wyoming and McDowell Counties, as discussed by Ray V. Hennen,* and in Raleigh County by C. E. Krebs, are as follows:

Pennsylvanian System	Allegheny Series....	
	Pottsville Series....	Upper or Kanawha Group.
		Middle or New River Group.
Mississippian System	Mauch Chunk Series	Lower or Pocahontas Group.

The writer's study of the fossils of the area has been confined to the Pennsylvanian System. The Allegheny rocks were here, as in the other portions of the State which have been investigated, not found to contain invertebrate remains. The whole of the Pottsville Series outcrops within the area studied. Its stratigraphy has been fully described in the reports on these and adjoining counties and will here be only briefly reviewed. The following table exhibits in succession from the top of the Kanawha Group downwards the horizons from which fossils have been obtained with their distances in feet below the top of the Group:

Table of the Fossiliferous Members of the Pottsville Series.†

	Intervals below top of Kanawha Group, in feet.
Kanawha Group	
Kanawha Black Flint	100
Buffalo Creek Limestone	425
Winifrede Limestone	582
Dingess Limestone	760
Seth Limestone	890
Campbell Creek Limestone	1117
Cannelton (Stockton) Limestone	1240
Roof shale of Eagle Coal	1369
Roof shale of Little Eagle Coal	1487
Eagle Limestone	1544
Gilbert (Dorothy) Shale	1820
New River Group.	
Douglas Shale	2075

*W. Va. Geol. Survey, Rept. on Wyoming and McDowell Counties, 1915; p. 48.

†Adapted from generalized section of this report; see above, pages 325-334.

Pocahontas Group.	
Royal Shale	3305
Roof shale of Pocahontas Coal No. 3	3475
North Fork Shale	3665
Base of Pottsville Series	3850

Of the members enumerated above, the Kanawha Black Flint and the Buffalo Creek Limestone were not recognized in the area of the report and no fossils were found at their horizons, unless the latter is the equivalent of the Winifrede Limestone, as suggested by Hennen.*

Fossils from these two limestones have been previously described or listed by the writer in reports on the paleontology of Kanawha,† Boone,‡ and Lewis§ Counties.

The correlation of the various members within the area of this report and in the counties from which fossils are here described is the work of Messrs. Hennen, Krebs and Reger, who studied the stratigraphy and discovered the fossiliferous localities from which they or the writer afterwards collected. The writer has visited a large proportion of the localities, but for purposes of collection only. The data here presented are of little assistance in making local correlations. From those horizons which are known to be highly fossiliferous only a few collections have been obtained which have yielded more than a very few species, while from the best collections have been obtained as many as twenty or thirty forms. Hence, very few collections contain a sufficient proportion of their total content of species to make correlation possible. From those horizons which have nowhere yielded more than a few forms the species obtained differ at different localities or show so few resemblances of fauna that no correlation is warranted by them; nor do differences of fauna at different localities in the same horizon—when only a few species are exhibited by any one collection from it—prove that the correlation of the beds in which they were found, as made on stratigraphic grounds, is erroneous. These statements apply to all the collections so far studied from the strata of the Pottsville Series in the State.

*West Virginia Geol. Survey, 1915; Rept. on Wyoming and McDowell Counties; p. 141.

†West Virginia Geol. Survey, 1914; Report on Kanawha County, p. 640.

‡Ibid, 1915; Report on Boone County; p. 594.

§Ibid, 1916; Report on Lewis and Gilmer Counties; p. 625.

When all the material collected has been studied and when additional localities have been investigated it is hoped that data will be available for the correlation of the members of the Series and that the true characters of the different faunas will be known. The following description of the separate faunas will, in view of the foregoing facts, be a description of the fossils collected from the various localities assigned to the different members, as set forth in the Register of Localities, rather than a description of the faunas themselves.

THE FAUNAS.

KANAWHA GROUP

Kanawha Black Flint Horizon.

Buffalo Creek Limestone Horizon.

As noted above, pages 335, 337 and 666, these horizons were not found to be fossiliferous within the area of the report.

Winifrede Limestone.

From the two localities in this horizon from which collections have been obtained 24 species are known. Only one other in the area of this report, the Eagle Limestone, is to be compared with it in variety of forms. The list of species follows:

Clionolithes canna sp. nov.
Crinoidea indeterminata.
Bryozoa indeterminata
Orbiculoidea missouriensis (Shumard).
Orbiculoidea capuliformis (McChesney).
Schizophoria altirostris (Mather).
Schizophoria resupinoides (Cox) ?
Derbya crassa (Meek and Hayden) (a).
Chonetes granulifer Owen.
Productus semireticulatus (Martin).
Marginifera wabashensis (Norwood and Pratten).
Spirifer boonensis Swallow ? (c).
Spiriferina kentuckyensis (Shumard).
Hustedia multicostata var. virginiana var. nov. (a).
Composita subtilita (Hall).
Nucula parva (McChesney) ?

Aviculipecten pellucidus Meek and Worthen.
Deltopecten eaglensis sp. nov.
Astartella concentrica (Conrad) (c).
Minute pelecypods (2 species).
Schizostoma catilloides (Conrad).
Nautilloidea indeterminata.
Ostracoda indeterminata.

From the type locality of the Winifrede Limestone in the town of Winifrede, Kanawha County, a few fragments of weathered calcareous limestone or shale were obtained by the writer on the surface, at 970′ above mean tide (aneroid measurement), Locality 68. This material was very full of fossils, only the casts of which were preserved. The outcrop of the limestone is now concealed.* A tentative list of the fossils found was given in the report on Kanawha County.† The same material has been further examined and the list extended.

The species of *Ambocoelia* then reported did not appear in the final examination and it is possible that the cast of a young individual of *Composita subtilita* was mistaken for it. Dr. I. C. White reports also many *Producti* from this stratum, which he places 66′ below the Winifrede Coal at that point.‡ Four of the species obtained here are found in the fossiliferous limestone and shale referred to this horizon in the Dorothy Section given below, while three species were not found there. A single specimen of *Spirifer boonensis* ? was found by Krebs at Indian Gap (Locality 131). No fossils appear in the list given above which may serve as horizon markers for this stratum, the abundance of marine species, particularly of brachiopoda, being the only characteristic which may be safely used as an aid in tracing the horizon.

Dingess Limestone.

The only locality in the area of this report from which Dingess fossils have been studied does not contain a marine fauna and is totally different in appearance, and in the probable origin

*West Virginia Geol. Survey, Rept. on Kanawha County, 1914; p. 641.

†Loc. cit.

‡West Virginia Geological Survey, Vol. II(A), p. 431.

of the stratum from which the collection was made, from the highly fossiliferous horizon of Logan, Mingo and Boone Counties. A single fossil species was discovered; namely, *Naiadites elongata* Dawson, which is commonly found in association with plant remains in fresh or brackish water deposits. From localities from other areas the following species are here described:

Crania modesta White and St. John.
Productus nodosus Newberry.
Productus sp.
Leda arata (Hall).
Leda meekana Mark.
Allerisma guyandotensis sp. nov.

Some of these species are associated with others which were studied and described in the report on Boone County. The species so far determined from this horizon and described in this and other reports are given below in the list of fossils from the Pottsville of the State.

Seth Limestone.

The collections from the Seth Limestone are two in number. This bed is shown in its relative position in the Dorothy Section, given below. The exposure of the formation at this point is poor and only a few species were obtained. They, however, show it to be a marine horizon, and there seems to be little doubt of the correlation of the fossiliferous bed found here with that of the second locality only a few miles distant. This place, Locality 114, at High Coal, yielded an abundant marine fauna, consisting of seven species of brachiopoda, nine pelecypoda and one gastropod. This collection is the only one which may be said to hold a fauna sufficiently distinct from the other well-developed faunas of the area to make correlation by fossil remains at all reliable, and the distinctive characters of this may disappear after further investigation of the other horizons. This collection is characterized by an unusually large number of pelecypod species, the Eagle Limestone being the only other one which resembles the Seth in this particular, and it has not yielded several of those found in the Seth; namely, *Chaenomya leavenworthensis, Aviculipinna americana, Naiadites elongata, Schizodus cuneatus* and *Deltopecten occidentalis*. Of these only *Naiadites elongata* has been found else-

where in the area, while only the latter and *Chaenomya leavenworthensis* have been found elsewhere in the Pottsville of the State. *Bellerophon crassus* var. *wewokanus,* the only gastropod species, is also restricted to it in the area under discussion. The list of fossils collected from this horizon follows:

Crinoidea indeterminata.
Lingula kanawhensis Price.
Derbya crassa (Meek and Hayden).
Productus semireticulatus (Martin).
Productus nodosus Newberry.
Pustula symmetrica (McChesney)?
Marginifera wabashensis (Norwood and Pratten).
Spirifer boonensis Swallow?
Composita subtilita (Hall)
Chaenomya leavenworthensis (Meek and Hayden).
Edmondia gibbosa (M'Coy).
Nucula parva McChesney ?
Leda meekana Mark.
Aviculipinna americana Meek.
Naiadites elongata Dawson.
Schizodus cuneatus Meek.
Deltopecten occidentalis (Shumard).
Allerisma guyandotensis sp. nov.
Bellerophon crassus var. wewokanus Girty.
Branchiata? indeterminata.

Campbell Creek Limestone.

The presence of fossils in this bed has been somewhat in doubt and none have been found in it within the area of the report, although they have been sought. Hennen noted a marine fauna here at Bald Knob, Boone County,[1] and the same was reported by Krebs at Kayford, Kanawha County.[2] These collections have not been studied by the writer, but it seems that the Kayford fossiliferous bed is separated from the Campbell Creek Coal by a greater interval than is usually the case for the Campbell Creek Limestone, Teets reporting the fossils 91′ above the coal, and separated from it by a partly concealed interval. The limestone is found at 15 to 20 feet above the coal throughout the area of its outcrop. What horizon this collection represents is not known. Two collections reported from the Campbell Creek Lime-

[1]West Virginia Geol. Survey, 1914; Rept. on Kanawha County, General Section Kanawha Group, by Ray V. Hennen; p. xxvii of Introduction.

[2]West Virginia Geol. Survey, 1915; Rept. on Boone County, p. 446.

stone have been examined. From Fayette County at the town of Crescent, near the town of Eagle, the type locality of the Eagle Limestone, Krebs* reports fossils "Three feet above the Campbell Creek Coal." Upon examination these proved to be *Lingula kanawhensis*, which was very abundant in the shaly matrix. In Boone County, at Locality 141, Teets collected fossils from two horizons about 20′ apart in vertical measurement,† which are thought to represent the limestone. The fossils prove to be crinoid columns and *Orbiculoidea capuliformis*. We then have the following species so far known from the horizon in question:

Crinoidea indeterminata.
Lingula kanawhensis Price (a).
Orbiculoidea capuliformis (McChesney).

Cannelton (Stockton) Limestone.

From the shale overlying the Matewan Coal and coming just below the horizon of the Cannelton Limestone two collections were obtained in the northern portion of Wyoming County, not far from the western edge of Raleigh. The position of the fossils with regard to the coal is shown in the Local Sections below. The following list shows this to be a marine horizon containing a very restricted fauna:

Lingula kanawhensis Price (a).
Myalina perniformis Cox ? (considerable doubt is attached to this identification).
Deltopecten flabellum sp. nov.
Branchiata ? indeterminata.

Roof Shale of Eagle Coal.

In the Dorothy Section, Locality 110, were found in the shale overlying the Eagle Coal abundant specimens of *Lingula kanawhensis*. Three and one-half feet above the coal was found a fragment of a pelecypod which was probably *Naiadites elongata*, but the specimen was destroyed in shipment and the identification made in the field could not be verified. These species denote a restricted marine or brackish water fauna. The basin of deposi-

*Letter to I. C. White.
†Oral communication.

tion was probably not open to the ocean for a period long enough for the incursion of a more numerous fauna.

Roof Shale of Little Eagle Coal.

Another restricted marine fauna was discovered in the roof shale of this coal at two localities in Wyoming County. The following species were found:

Spirorbis (Microconchus) pusillus (Martin)
Orbiculoidea missouriensis (Shumard).
Myalina perniformis Cox.
Deltopecten flabellum sp. nov.
Pelecypoda indeterminata.

All the forms of the list were found at a single locality and at the other, Locality 127, only a few fragmentary specimens of *Deltopecten flabellum* were obtained.

Eagle Limestone.

This, the most abundantly and persistently fossiliferous horizon of the area, was discovered at many places, but the soft shales which bear the fauna are seldom well exposed and few good collections have been obtained from it within the area of the report. The shale is, moreover, frequently badly weathered and only molds of the fossils, the shells of which have been leached out, are to be found in them. The fullest collection from the horizon was made near the town of Eagle, at the type locality of the limestone, and a large amount of material from there has been studied, yielding 13 species of brachiopoda, 6 pelecypoda and 2 gastropoda. This list may be enlarged when all the material collected there has been studied. The best collection from the area of the report, at Locality 80, has yielded 3 species of brachiopoda and 6 pelecypoda. Few of the others gave more than two or three species. Fossils from localities outside the area of the report are included in the descriptions and lists, in order to make a fuller study of this limestone. An examination of the following list of species described from the Eagle Limestone discloses the fact that only some of the less common and less widely distributed pelecypoda are restricted, so far as now known, to this horizon:

Lingula lemniscata sp. nov.
Orbiculoidea missouriensis (Shumard).
Orbiculoidea capuliformis (McChesney).
Schizophoria altirostris (Mather).
Schizophoria resupinoides (Cox) ?
Derbya crassa (Meek and Hayden).
Chonetes granulifer Owen.
Productus nodosus Newberry ?
Marginifera wabashensis (Norwood and Pratten).
Spirifer boonensis Swallow?
Spiriferina kentuckyensis (Shumard).
Hustedia multicostata var. virginiana var. nov.
Composita subtilita (Hall).
Solenomya radiata Meek and Worthen.
Prothyris carinata sp. nov.
Solenopsis solenoides (Geinitz).
Edmondia gibbosa (M'Coy).
Nucula anodontoides Meek ?
Nucula parva McChesney ?
Leda arata (Hall).
Leda meekana Mark.
Parallelodon sp.
Schizodus affinis Herrick.
Deltopecten eaglensis sp. nov.
Deltopecten sp.
Lima retifera Shumard ?
Allerisma guyandotensis sp. nov. (c).
Astartella concentrica (Conrad).
Pelecypoda indeterminata.
Phanerotrema grayvillense (Norwood and Pratten) ?
Schizostoma catilloides (Conrad).

Gilbert (Dorothy) Shale.

From four localities which are considered to be at approximately the same horizon the following species were obtained:

Lingula kanawhensis Price.
Sanguinolites raleighensis sp. nov.
Prothyris carinata sp. nov.
Deltopecten flabellum sp. nov.
Allerisma guyandotensis sp. nov.
Plagioglypta meekana (Geinitz) ?
Aclisina stevensiana (Meek and Worthen).
Aclisina conditi Mark ?
Aclisina sp.
Pisces indeterminata.

At an opening in the Gilbert Coal on Walls Branch of Clear Fork of Guyandot River, in Wyoming County, *Lingula kanawhensis* was found in profusion, associated with *Deltopecten flabellum* sp. nov. The fossils were found in black shale immediately on top of the coal. At 480′ (aneroid measurement) be-

low the highest point of the wagon road in Clear Fork Gap, on the line between Wyoming and Raleigh Counties, on the eastern slope of Guyandot Mountain, Hennen found fossils in a thin layer of shale which lies in a forty foot interval of black and yellow shales and 15′ above a 1″ coal which is considered to represent the Gilbert bed. Here were found *Sanguinolites raleighensis* sp. nov., *Prothyris carinata* sp. nov., *Allerisma guyandotensis* sp. nov. and *Plagioglypta meekana ?* In sandy shale at Localities 109 and 130 in Raleigh County, and at other places in the same general region, were found occasional specimens of *Allerisma guyandotensis.* The fossils at Locality 130 and at other points near by were found about 140′ below the Lower War Eagle Coal. At Clear Fork Gap they were found 155′ below the coal. However, at Dorothy, Locality 109, they were found only 43′ under it, and there is some doubt as to the correlation of this bed with the Gilbert Shale. It has been named the Dorothy Shale by Krebs in this report. There seems to be considerable thickening of the beds in this part of the section in going from Dorothy to Clear Fork Gap, and it is possible that the Dorothy and Gilbert Shales are the same. The fish remains (minute scales) and three species of *Aclisina* were found at Locality 81, not far from Clear Fork Gap. This horizon may be said to hold a marine fauna restricted in numbers and variable in its local expression.

The Kanawha Group is thus seen to contain at least eleven fossiliferous horizons, of which six denote marine conditions, with a fairly numerous assemblage of species in each fauna. The shallow water along shore, where the sandy nature of the formations indicates the shells were preserved, was at times crowded with countless individuals. At other times only stragglers from the main inhabited portions of the ocean found their way into the area. These formations are, in descending order, the Kanawha Black Flint, the Buffalo Creek, Winifrede, Dingess, Seth and Eagle Limestones. Five horizons denote marine conditions, but the restricted nature of the fauna indicates that many of the species inhabiting the ocean of the time failed to return to the area with every invasion of the water. The faunas of this nature are those of the Campbell Creek Limestone, Cannelton Shale, the roof shale of the Eagle and Little Eagle Coals and the Gilbert and Dorothy Shales.

NEW RIVER GROUP

Douglas Shale.

Here we have only *Lingula kanawhensis* and some obscure remains of gastropoda. The lingulas were in great abundance in a fissile, black shale immediately overlying the Lower Douglas Coal at the two localities where fossils were discovered at this horizon. This fauna indicates either marine or brackish water deposition.

POCAHONTAS GROUP

Roof Shale of Pocahontas Coal No. 6. (Royal Shale).

Roof Shale of Pocahontas Coal No. 3.

North Fork Shale.

These three horizons have been found to contain abundant plant fossils and occasional specimens of *Naiadites elongata* Dawson, which become very abundant in some layers of the shale units. In the North Fork Shale *Spirorbis pusillus* (Martin) was associated with, and attached to, the shells of the naiadites; minute ostracod shells being likewise abundant.

Fossils were found at only one locality in each of these horizons, with the exception of the North Fork Shale, where they were found at two places.

All of these forms are inland lake or estuarine dwellers, and do not denote marine conditions.

FAUNAL HISTORY OF THE POTTSVILLE SERIES.

The data presented above, with the tables showing the geographic and stratigraphic distribution of the fossils, make it possible to draw a few general conclusions as to the recurrence of marine conditions in the area throughout the period. When only five marine fossil horizons were known in the Kanawha Group, Dr. I. C. White made the following statement:*

*West Virginia Geol. Survey, 1914; Report on Kanawha County, p. xxv of Introduction by I. C. White.

"This series of coals [Kanawha] at least was accumulated along the margin of an ocean or gulf whose tidal flats and swamps were subject to incursions of marine waters throughout the deposition of more than 1,000 feet of sediments."

The conditions of deposition of the upper portion of the Kanawha Group thus pictured are now known to have prevailed even earlier in the period than was then supposed. The following short sketch of the events which took place, as revealed by a study of the faunas, will serve to amplify the above description:

During the deposition of the Pocahontas Group of rocks no marine life is known to have visited the area of its outcrop in the State, but in the basins where plant life was being preserved in the sediments non-marine pelecypoda, crustacea and vermes occasionally thrived. In the upper portion of the New River Group, after 1,040 feet had been deposited, there was a connection between the ocean and the basin in which sedimentation was in progress and a single marine species, *Lingula kanawhensis*, found its way past the barriers which had existed. After its withdrawal 260 feet of New River sediments were laid down. Almost at the beginning of Kanawha time another incursion of marine waters took place and a restricted, but truly marine, fauna appeared, consisting of the same species of *Lingula*, four pelecypoda, one scaphopod and at least four species of gastropoda. This was the herald of a profuse fauna which shortly appeared in the Eagle Limestone. A few of the species of the older fauna returned with many others, 35 in all, about evenly distributed between the brachiopoda and pelecypoda, with two gastropoda. Following this 700 feet of strata intervened before marine faunas again had full access to the region. During this time there were several periods of partial or restricted communication with oceanic waters when a few species appeared. The close of this period marks the last appearance of a number of the former inhabitants of the region, particularly among the pelecypoda. Several of the latter are here described for the first time. Finally, beginning with the deposition of the Seth Limestone, a period of frequent invasion of oceanic waters was inaugurated, bringing the fairly rich faunas of the Dingess, Winifrede and Buffalo Creek Lime-

stones, terminated, in many places, but not, so far as known, within the area of the counties here especially reported on, by the appearance and subsequent withdrawal of the Kanawha Black Flint fauna. This fauna contains several species which are not known to have returned to the State with the resumption of marine deposition in Conemaugh time. Many of these species are, however, known to be widespread and persistent in the deposits of the Pennsylvanian of North America and these reappeared in the later faunas.

From the table showing the stratigraphic distribution of the Pottsville fossils of the State the following species are seen to be restricted to the Series so far as now known:

Clionolithes canna sp. nov.
Enchostoma elkensis Price.
Enchostoma sp.
Lingula kanawhensis Price.
Lingula lemniscata sp. nov.
Spirifer boonensis Swallow ?
Orbiculoidea capuliformis (McChesney).
Crania modesta White and St. John.
Schizophoria altirostris (Mather).
Schizophoria resupinoides (Cox) ?
Productus nodosus Newberry.
Spiriferina kentuckyensis (Shumard).
Hustedia multicostata var. virginiana var. nov.
Sanguinolites raleighensis sp. nov.
Prothyris carinata sp. nov.
Schizodus cuneatus Meek.
Deltopecten eaglensis sp. nov.
Deltopecten flabellum sp. nov.
Deltopecten sp.
Allerisma guyandotensis sp. nov.
Astartella gurleyi White.
Minute pelecypods (2 sp.).
Pleurotomaria carbonaria Norwood and Pratten ?
Strophostylus nanus (Meek and Worthen).
Aclisina conditi Mark ?
Aclisina sp.
Conularia crustula White ?
Griffithides scitulus (Meek and Worthen).

After a full examination of the data in hand it has seemed best not to discuss at this time the subject of the correlation of the faunas with those of distant States. This discussion is reserved until a better knowledge is obtained of the relative abundance of the West Virginia species.

The following tables exhibit, first, the geographic distribution and stratigraphic range of the fossils of this report, and, second, a list of the invertebrate fossils from the Pottsville of West Virginia, compiled from this and previous reports of this Survey on Kanawha, Boone and Lewis counties:

List of Invertebrate Fossils from the Pottsville Section of West Virginia.

SPECIES	Kanawha Group											New River Group	Pocahontas Group		
	Kanawha Black Flint	Buffalo Creek Limestone	Winifrede Limestone	Dingess Limestone	Seth ls.	Campbell Creek ls.	Cannelton (Stockton) ls	Roof sh. of Eagle Coal	Roof sh. of Little Eagle Coal	Eagle ls.	Gilbert (Dorothy) sh.	Douglas sh.	Royal sh.	Roof sh. of Pocahontas Coal No. 3	North Fork sh.
Clionolithes canna sp. nov.	...	...	*	...	...	...	...	...	...	...	...	...	...	...	...
Enchostoma elkensis Price	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enchostoma sp.	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vermes incerti	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Spirorbis (Microconchus) pusillus (Martin)	...	...	...	...	...	...	...	...	*	...	...	...	...	...	...
Spirorbis sp.	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Crinoidea indeterminata	...	...	*	c	*	*	...	...	...	...	...	...	...	...	...
Bryozoa indeterminata	...	...	*	...	...	...	...	...	...	...	...	...	...	...	...
Lingula kanawhensis Price	*	...	...	...	*	*	*	aa	...	...	*	*	...	...	...
Lingula umbonata Cox	*	...	...	...	...	...	...	...	...	*	...	...	...	...	...
Lingula lemniscata sp. nov.	...	...	...	...	...	...	...	...	...	*	...	...	...	...	...
Orbiculoidea missouriensis (Shumard)	...	...	*	...	...	...	...	...	*	*	...	...	...	...	...
Orbiculoidea capuliformis (McChesney)	*	*	*	*	...	*	...	...	...	*	...	...	...	...	...
Crania modesta White and St. John	...	...	...	*	...	...	...	...	...	...	...	...	...	...	...
Schizophoria altirostris (Mather)	...	...	*	...	...	...	...	...	...	*	...	...	...	...	...
Schizophoria resupinoides (Cox) ?	...	...	*	...	...	...	...	...	...	*	...	...	...	...	...
Derbya crassa (Meek and Hayden)	*	*	aa	*	*	...	...	...	...	*	...	...	...	...	...
Derbya robusta (Hall)	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chonetes granulifer Owen	*	*	*	*	...	...	...	...	...	*	...	...	...	...	...
Productus semireticulatus (Martin)	?	*	*	*	*	...	...	...	...	...	...	...	...	...	...
Productus cf. cora d'Orbigny	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Productus nodosus Newberry	...	*	...	c	*	...	...	...	...	?	...	...	...	...	...
Productus sp.	...	...	...	*	...	...	...	...	...	...	...	...	...	...	...
Pustula nebraskensis (Owen)	...	...	...	*	...	...	...	...	...	...	...	...	...	...	...
Pustula symmetrica (McChesney)	cf.	*	...	*	?	...	...	...	...	...	...	...	...	...	...
Marginifera wabashensis (Norwood and Pratten)	...	*	*	c	*	...	...	...	...	*	...	...	...	...	...
Spirifer boonensis Swallow ?	c	*	c	c	*	...	...	...	...	*	...	...	...	...	...
Spiriferina kentuckyensis (Shumard)	...	...	*	...	...	...	...	...	...	*	...	...	...	...	...
Hustedia multicostata var. virginiana var. nov.	...	...	*	...	...	...	...	...	...	*	...	...	...	...	...
Composita subtilita (Hall)	*	...	*	...	*	...	...	...	...	*	...	...	...	...	...
Composita sp.	...	...	...	c	...	...	...	...	...	...	...	...	...	...	...
Solenomya radiata Meek and Worthen	...	...	...	...	...	...	...	...	...	*	...	...	...	...	...
Sanguinolites raleighensis sp. nov.	...	...	...	...	...	...	...	...	...	...	*	...	...	...	...

TABLE OF RANGE AND DISTRIBUTION OF FOSSILS OF THIS REPORT.

Localities

Species	33	63	67	68	71	72	73	74	75	76	79	80	81	82	83	84	85	87	108	109	110	111	112	113	114	117	118	119	120	121	122	124	125	126	127	128	129	130	131	140	141
Clionolithes canna sp. nov	*																							*																	
Spirorbis (Microconchus) pusillus (Martin)										*																								a							
Crinoidea indeterminata				*																				*	*																*
Bryozoa indeterminata																								*																	
Lingula kanawhensis Price							aa		aa		aa			aa	aa						aa				*															a	
Lingula lemniscata sp. nov												aa																													
Orbiculoidea missouriensis (Shumard)		c								*														c																	
Orbiculoidea capuliformis (McChesney)		c										c												*																	*
Crania modesta White and St. John			*																																						
Schizophoria altirostris (Mather)		aa																						aa																	
Schizophoria resupinoides (Cox) ?		a																						*																	
Derbya crassa (Meek and Hayden)		a		*																				aa	a																
Chonetes granulifer Owen		c																						a																	
Productus semireticulatus (Martin)																								a	*																
Productus nodosus Newberry		?	*									?													aa						c										
Productus sp			*																																						
Pustula symmetrica (McChesney) ?																									*																
Marginifera wabashensis (Norwood and Pratten)		aa																						aa	*																
Spirifer boonensis Swallow ?		c		*																				c	a														*		
Spiriferina kentuckyensis (Shumard)		*																						a																	
Hustedia multicostata var. virginiana var. nov		*																						a																	
Composita subtilita (Hall)		a		*																		*		a																	
Solenomya radiata Meek and Wortben												*																													
Sanguinolites raleighensis sp. nov																																				*					
Prothyris carinata sp. nov																*																				*					
Solenopsis solenoides (Geinitz)								*																																	
Chaenomya leavenworthensis (Meek and Hayden)																									*																
Edmondia gibbosa (M'Coy)		*																							a																
Nucula anodontoides Meek ?												*															*														
Nucula parva McChesney ?				*																					*		*														
Leda arata (Hall)								*									*											*													
Leda meekana Mark		*										c													c		*	*				*									
Parallelodon sp		*																																							
Aviculipinna americana Meek																									c																
Myalina perniformis Cox							?			c																															
Naiadites elongata Dawson					*														aa				*		c								aa	aa							
Schizodus affinis Herrick		*																																							
Schizodus cuneatus Meek																									a																
Aviculipecten pellucidus Meek and Worthen				*																																					
Deltopecten occidentalis (Shumard)																									a																
Deltopecten eaglensis sp. nov		*																						*																	
Deltopecten flabellum sp. nov							a		*	a																									*						
Deltopecten sp						*																																			
Lima retifera Shumard ?												*																													
Allerisma guyandotensis sp. nov								*				*					*	*		*		*			*	*	*			?						*	*	*			
Astartella concentrica (Conrad)		a		*								?												c																	
Pelecypoda indeterminata										*																			*												
Minute pelecypods																								*																	
Plagioglypta meekana (Geinitz) ?																																				*					
Bellerophon crassus var. wewokanus Girty																									*																
Phanerotrema grayvillense (Norwood and Pratten) ?		*																																							
Schizostoma catilloides (Conrad)		a																						*																	
Aclisina stevensiana (Meek and Worthen)													*																												
Aclisini conditi Mark?													*																												
Aclisini sp													*																												
Gastropoda indeterminata															*																			c							
Nautilloidea indeterminata																								*																	
Branchiata ? indeterminata							*															*																			
Ostracoda indeterminata																								aa										a							
Pisces indeterminata													c																												

Stratigraphic distribution

Species	Conemaugh Series	Pottsville Series												
		Kanawha Group									New River Group	Pocahontas Group		
	Brush Creek ls.	Winifrede ls.	Dingess ls.	Seth ls.	Campbell Creek ls.	Cannelton (Stockton) ls.	Roof sh. of Eagle Coal	Roof sh. of Little Eagle Coal	Eagle ls.	Gilbert sh.	Douglas sh.	Royal sh.	Roof sh. of Pocahontas No. 3 Coal	North Fork sh.
Clionolithes canna sp. nov	*	*												
Spirorbis (Microconchus) pusillus (Martin)								*						a
Crinoidea indeterminata		*		*	*									
Bryozoa indeterminata		*												
Lingula kanawhensis Price				*	*	aa	aa			*	aa			
Lingula lemniscata sp. nov									*					
Orbiculoidea missouriensis (Shumard)		*						*	*					
Orbiculoidea capuliformis (McChesney)		*			*				*					
Crania modesta White and St. John			*											
Schizophoria altirostris (Mather)		*							*					
Schizophoria resupinoides (Cox) ?		*							*					
Derbya crassa (Meek and Hayden)		a		*					*					
Chonetes granulifer Owen		*							*					
Productus semireticulatus (Martin)		*		*										
Productus nodosus Newberry			*	*					?					
Productus sp			*											
Pustula symmetrica (McChesney) ?				*										
Marginifera wabashensis (Norwood and Pratten)		*		*					*					
Spirifer boonensis Swallow ?		c		*					*					
Spiriferina kentuckyensis (Shumard)		*							*					
Hustedia multicostata var. virginiana var. nov		*							*					
Composita subtilita (Hall)		*		*					*					
Solenomya radiata Meek and Wortben									*					
Sanguinolites raleighensis sp. nov										*				
Prothyris carinata sp. nov									*	*				
Solenopsis solenoides (Geinitz)									*					
Chaenomya leavenworthensis (Meek and Hayden)				*										
Edmondia gibbosa (M'Coy)				*					*					
Nucula anodontoides Meek ?									*					
Nucula parva McChesney ?		*		*					*					
Leda arata (Hall)			*						*					
Leda meekana Mark			*	*					c					
Parallelodon sp									*					
Aviculipinna americana Meek				*										
Myalina perniformis Cox						?		*						
Naiadites elongata Dawson			*	*								*	*	*
Schizodus affinis Herrick									*					
Schizodus cuneatus Meek				*										
Aviculipecten pellucidus Meek and Worthen		*												
Deltopecten occidentalis (Shumard)				*										
Deltopecten eaglensis sp. nov		*							*					
Deltopecten flabellum sp. nov						*		*		*				
Deltopecten sp									*					
Lima retifera Shumard ?									*					
Allerisma guyandotensis sp. nov			*	*					c	*				
Astartella concentrica (Conrad)		c							*					
Pelecypoda indeterminata								*	*					
Minute pelecypods		*												
Plagioglypta meekana (Geinitz) ?										*				
Bellerophon crassus var. wewokanus Girty				*										
Phanerotrema grayvillense (Norwood and Pratten) ?									*					
Schizostoma catilloides (Conrad)		*							*					
Aclisina stevensiana (Meek and Worthen)										*				
Aclisini conditi Mark?										*				
Aclisini sp										*				
Gastropoda indeterminata											*			*
Nautilloidea indeterminata		*												
Branchiata ? indeterminata				*		*								
Ostracoda indeterminata		*												*
Pisces indeterminata										*				

List of Invertebrate Fossils from the Pottsville Section of West Virginia.

SPECIES	Kanawha Group											New River Group	Pocahontas Group		
	Kanawha Black Flint	Buffalo Creek Limestone	Winifrede Limestone	Dingess Limestone	Seth ls.	Campbell Creek ls.	Cannelton (Stockton) ls	Roof sh. of Eagle Coal	Roof sh. of Little Eagle Coal	Eagle ls.	Gilbert (Dorothy) sh.	Douglas sh.	Royal sh.	Roof sh. of Pocahontas Coal No. 3	North Fork sh.
Prothyris carinata sp. nov										*	*				
Solenopsis solenoides (Geinitz)										*					
Chaenomya leavenworthensis (Meek and Hayden)	*				*										
Edmondia gibbosa (M'Coy)					*					*					
Edmondia sp	*														
Nucula anodontoides Meek ?										*					
Nucula parva McChesney	*		?		?					?					
Leda arata (Hall)				*						*					
Leda meekana Mark				*	*					*					
Parallelodon sangamonensis (Worthen)	*														
Parallelodon sp										*					
Aviculipinna americana Meek					*										
Myalina perniformis Cox							?		*						
Myalina subquadrata Shumard	*														
Naiadites elongata Dawson				*	*								*	*	*
Schizodus affinis Herrick	*									*					
Schizodus cuneatus Meek					*										
Aviculipecten pellucidus Meek and Worthen			*												
Deltopecten occidentalis (Shumard)					*										
Deltopecten eaglensis sp. nov			*							*					
Deltopecten flabellum sp. nov							*		*		*				
Deltopecten sp										*					
Pectenoidea	*														
Lima retifera Shumard										?					
Allerisma terminale Hall	*														
Allerisma guyandotensis sp. nov			?	*						c	*				
Astartella concentrica (Conrad)	*	c								*					
Astartella gurleyi White			*												
Pelecypoda indeterminata									*	*					
Minute pelecypods			*												
Plagioglypta meekana (Geinitz) ?											*				
Bellerophon crassus var. wewokanus Girty				*						*					
Euphemus carbonarius (Cox)	?									*					
Pleurotomaria carbonaria Norwood and Pratten	?														
Phanerotrema grayvillense (Norwood and Pratten)										?					
Schizostoma catilloides (Conrad)			*							*					
Strophostylus nanus (Meek and Worthen)										*					
Sphaerodoma sp	*														
Aclisina stevensiana (Meek and Worthen)											*				
Aclisina conditi Mark ?											*				
Aclisina sp											*				
Conularia crustula White ?	*			*											
Gastropoda indeterminata												a			*
Orthoceras sp	*														
Pseudorthoceras knoxense (McChesney)	?														
Nautilloidea indeterminata			*												
Tainoceras occidentalis (Swallow)	?														
Branchiata ? indeterminata					*		*								
Griffithides scitulus (Meek and Worthen)				*											
Ostracoda indeterminata			*												*
Pisces indeterminata											*				
Cladodus sp				*											

LOCAL SECTIONS

Local sections showing the character and position of certain of the fossiliferous beds of the area are given herewith, in order to supplement the sections presented in Part II of this Report on the geology of Raleigh County and in the report on Wyoming and McDowell Counties. The section at Dorothy, Raleigh County, measured by Krebs and Teets, is here reproduced from pages 51-55 above, with corrections by the writer, assisted by D. D. Teets. This section contains five of the fossil beds of the Kanawha Group, the species collected here being indicated in their proper positions in the section. The section was measured "Descending northward from a high summit along the spur of a ridge to Dorothy upper tipple, thence along the incline to Dorothy and joined to Diamond Drill Test Hole No. 1 at Dorothy, Clear Fork District, Raleigh County, West Virginia."*

Dorothy Section, Clear Fork District.

	Thickness.		Total	
Pennsylvanian.	Ft.	In	Ft.	In.
Allegheny Series (244′)				
Sandy shale and sandstone	50	0	50	0
Sandstone and concealed, **East Lynn**	75	0	125	0
Dark shale	10	0	135	0
Coal, Upper Kittanning	9	8	144	8
Sandy shale and concealed	35	4	180	0
Coal blossom, **Middle Kittanning**	4	0	184	0
Sandy shale and concealed	60	0	244	0
Pottsville Series.				
Kanawha Group (1369′, to top of Bore Hole No. 1)				
Sandstone, massive, **Homewood**	156	0	400	0
Coal, **Stockton-Lewiston**	5	0	405	0
Sandstone and concealed, **Coalburg**	95	0	500	0
Sandy shale and concealed, bench	5	0	505	0
Sandstone and concealed	79	0	584	0
Coal, **Buffalo Creek**	1	6	585	6
Sandstone and concealed	48	6	634	0
Dark shale	1	0	635	0
Coal, **Winifrede (Dorothy)**	10	0	645	0
Dark shale	8	6	653	6
Coal and slate	0	6	654	0
Dark shale	2	4	656	4
Limestone, dark gray impure	0	8	657	0
Dark sandy shale	8	6	665	6
Coal, splint, **Lower Winifrede**	1	6	667	0

*C. E. Krebs, Loc. cit.

	Thickness. Ft.	In.	Total. Ft.	In.
Sandy shale	15	0	682	0
Coal and slate	4	2	686	2
Sandstone, massive	45	10	732	0
Sandy shale and sandstone	11	0	743	0
Gray, limy shale	11	0	754	0
Gray, limy shale, **Winifrede**: *Clionolithes canna sp. nov., Crinoidea indeterminata, Bryozoa indeterminata, Orbiculoidea missouriensis, Schizophoria altirostris (a). S. resupinoides? Derbya crassa (aa), Chonetes granulifer (aa), Productus semireticulatus, Marginifera wabashensis (a), Spirifer boonensis ? (a), Spiriferina kentuckyensis (a), Hustedia multicostata var. virginiana var. nov. (a), Composita subtilita (a), Deltopecten eaglensis sp. nov., Astartella concentrica (a), Schizostoma catilloides, Nautiloidea, Ostracoda (aa).* **Locality 113**	3	0	757	0
Limestone, dark gray, **Winifrede** ? *Crinoidea indeterminata, Orbiculoidea missouriensis, O. capuliformis, Derbya crassa (aa), Chonetes granulifer (c), Productus semireticulatus (a), Marginifera wabashensis (c), Spirifer boonensis ? (c), Spiriferina kentuckyensis, Composita subtilita (a), Minute pelecypoda.* **Locality 113**	1	0	758	0
Gray, limy shale	6	0	764	0
Limestone, impure	3	0	767	0
Sandstone	19	6	786	6
Coal, and slate, **Chilton**	1	6	788	0
Shale, gray	3	0	791	0
Limestone, impure	1	0	792	0
Sandstone, massive	42	6	834	6
Coal, dirty, reported	1	6	836	0
Sandstone, massive	14	0	850	0
Coal, gas	1	0	851	0
Shale, gray	8	0	859	0
Coal, splint	1	0	860	0
Shale, gray	4	0	864	0
Coal, gas.....0′ 8″ Slate .....0 1 } **Little Chilton**.... Coal, gas.....0 2	0	11	864	11
Shale, dark gray	5	1	870	0
Sandstone, massive, **Hernshaw**	40	0	910	0
Concealed	2	0	912	0
Coal, splint, **Hernshaw**	2	0	914	0
Shale, gray	1	0	915	0
Sandstone, flaggy	34	0	949	0
Shale, gray	1	0	950	0
Shale, dark, gray	1	3	951	3
Coal, gas, **Dingess**	2	9	954	0
Shale, gray	7	9	961	9

	Thickness. Ft.	In.	Total. Ft.	In.
Sandstone, weathered spheroidal on edges..	3	0	964	9
Shale, gray, limy.....	1	6	966	3
Shale, gray, **Dingess.** *Naiadites elongata.* **Locality 112**.....	0	2	966	5
Coal	0	1	966	6
Gray, limy shale, **Dingess?** *Naiadites elongata.* **Locality 112**.....	0	11	967	5
Shale, dark.....	1	0	968	5
Sandstone, gray, weathered spheroidal on edges	2	0	970	5
Shale, gray.....	3	0	973	5
Sandstone, massive, with coal streak.....	60	0	1033	5
Shale, gray, limy, **Seth:** *Composita subtilita, Allerisma guyandotensis sp. nov. (a), Branchiata ? indeterminata.* **Locality 111**.....	3	0	1036	5
Shale, dark gray, limy, full of iron ore nodules.....	32	0	1068	5
Coal, gas.....0′ 10″				
Slate 0 1				
Coal, splint...1 7				
Slate 0 1				
Coal, splint...1 2				
Shale, gray...2 3 } **Cedar Grove (Thacker)**	8	11	1077	4
Coal, splint...0 2				
Slate 0 1				
Coal, splint...0 8				
Slate 1 0				
Coal, splint...1 0				
Sandy shale and concealed.....	57	1	1134	5
Shale, gray, full of plant fossils.....	7	6	1141	11
Coal, gas, **Campbell Creek, (No. 2 Gas), Upper Bench**.....	2	6	1144	5
Concealed	15	0	1159	5
Sandstone, flaggy.....	22	0	1181	5
Coal .....1′ 11″				
Slate .....0 1 **Campbell Creek (No. 2 Gas), Lower Bench**	3	10	1185	3
Coal, gas.....0 10				
Coal, impure..1 0				
Shale, gray.....	2	2	1187	5
Sandstone	21	7	1209	0
Sandy shale.....	20	0	1229	0
Concealed	33	5	1262	5
Coal, gas, **Powellton**.....	1	7	1264	0
Shale, sandy, dark.....	40	0	1304	0
Limestone, dark gray, **Stockton**.....	1	0	1305	0
Shale, sandy, gray, obscure *pelecypoda*, probably *Naiadites elongata* at base of unit. **Locality 110**.....	16	0	1321	0
Sandstone, ferriferous.....	3	0	1324	0
Shale, black: *Lingula kanawhensis (aa).* **Locality 110**.....	0	11	1324	11
Coal, gas.....0′ 10″				
Slate .....0 1 } **Eagle**.....	4	1	1329	0
Coal, gas.....3 2				

	Thickness. Ft.	In.	Total. Ft.	In.
Slate, dark	1	0	1330	0
Sandstone, massive, **Decota**	19	7	1339	7
Coal, gas.....1′ 0″ Slate .....0 1 Coal, gas.....1 7 } **Little Eagle** Slate .....0 2 Coal, gas.....0 7	3	5	1343	0
Sandy shale	24	0	1367	0
Sandstone, massive	28	0	1395	0
Sandstone, shelly	16	0	1411	0
Sandstone, flaggy	44	0	1455	0
Shale, sandy	16	0	1471	0
Sandstone	4	0	1475	0
Shale, dark	4	4	1479	4
Limestone, **Eagle**, dark gray, impure	0	8	1480	0
Shale, dark	5	0	1485	0
Sandstone, massive, coarse grained	22	0	1507	0
Shale, dark, sandy	20	0	1527	0
Concealed	14	0	1541	0
Shale, gray	14	0	1555	0
Coal, gas, **Lower War Eagle**	2	0	1557	0
Sandstone, **Upper Gilbert**	6	9½	1565	9½
Coal, gas..... 0′ 5½″ Slate ..... 0 0½ Coal, gas..... 0 6 Slate ..... 0 0½ Coal ..... 0 2 Sandstone, dark gray .....10 0 Shale, gray, limestone concretions... 5 6 Coal, gas..... 0 11 Slate ..... 0 1 Coal, gas..... 0 6	18	2½	1582	0
Limestone, impure, weathers to dark gray clay	2	0	1584	0
Shale, gray, limy	21	0	1605	0
Shale, gray, **Dorothy (Gilbert)**: *Allerisma guyandotensis sp. nov.* **Locality 109**	2	0	1607	0
Shale, gray	6	0	1613	0

Level of railroad grade at Dorothy, elevation 954′ A. T. L.

(Bore Hole No. 1 continues the section below this point, pages 54-55 above).

Cannelton Limestone Horizon.

Section at Locality 73:	Ft.	In.
Shale, black, fossiliferous in lower 1 foot, **Cannelton Limestone horizon**, *Lingula kanawhensis (aa), Myalina perniformis (?), Deltopecten flabellum, Branchiata ? indeterminata.* **Locality 73**	8	0

		Ft.	In.
Coal .....0' 11" Coal and bone.0 10 Coal .....0 5 Shale .....5 0 Coal 1 9	Matewan Coal, 1850' (aneroid, above tide)....	8	11
Section at Locality 79:			
Shale, gray		6	+
Shale, black, argillaceous		0	6
Shale, black, argillaceous, Cannelton Limestone horizon, *Lingula kanawhensis (a)*, Locality 79		0	4
Shale, brown, weathered		0	2
Concealed		4	4
Coal, Matewan, 2750' (aneroid, above tide) in abandoned opening, reported		6	0
Section at Locality 76:			
Shale, sandy, barren		2	0
Shale, black, *Spirorbis pusillus, Orbiculoidea missouriensis, Myalina perniformis (c), Deltopecten flabellum (a), Pelecypoda indeterminata*, Locality 76		0	22
Shale, black, argillaceous, plant fossils (a)		0	24
Coal, Little Eagle, 1645' (aneroid, above tide)		0	28
Section at Locality 75:			
Shale, sandy, thin-bedded		3	+
Shale, black, changing to yellow, Gilbert, *Lingula kanawhensis (aa), Deltopecten flabellum*, Locality 75		2	6
Coal, Gilbert		0	28

Register of Localities.

The following list includes all the localities in Raleigh, Wyoming and McDowell Counties from which fossils have been collected by the writer, together with those localities, in the area named, from which collections made by other members of the Survey staff have been studied. Localities in adjoining and neighboring counties from which fossils are described in this Report are also included. An asterisk (*) denotes the localities from which collections have been studied for this report:

33.* Preston County, Valley District, Kingwood Turnpike, 2.1 miles east of Reedsville, 2170' B-A. T., roadside. Conemaugh Series, Brush Creek Limestone.

63.* Fayette County, Kanawha District, C. & O. R. R. cut at grade 1.1 miles south of mouth of Smithers Creek, on west bank of Kanawha River, ½ mile north of town of Eagle, 642' L-A. T. (Type Locality), Edgewater tipple. Kanawha Group, Eagle Limestone.

67.* Kanawha County, Cabin Creek District, hillside at Winifrede Junction, 837′ L-A. T., Kanawha Group, Dingess Limestone.

68.* Kanawha County, Cabin Creek District, North Hollow of Fields Creek, 0.1 mile east of mouth of South Hollow, in town of Winifrede, 970′ B-A. T., but not in place. (Type Locality), Kanawha Group, Winifrede Limestone.

71.* Mercer County, Virginian R. R. cut 100 yards east of station at Matoaka, Pottsville Series, Pocahontas Group, North Fork Shale.

72.* Wyoming County, Oceana District, north bank of Road Fork of Huff Creek, at its mouth at Swope, 1190′ B-A. T., 8 feet above public road. Kanawha Group, Eagle Shale.

73.* Wyoming County, Oceana District, Huff Creek, 0.5 mile north of mouth of Laurel Branch, 1.4 miles south of cornering of Wyoming-Logan-Boone Counties, 1580′ B-A. T. Kanawha Group, Cannelton Limestone (Matewan Coal roof).

74.* Logan County, Triadelphia District, 0.8 mile west of mouth of Sandlick Branch of Huff Creek, and near Cyclone P. O., shale under very prominent projecting ledge of sandstone, 830′ B-A. T. Kanawha Group, Eagle Shale.

75.* Wyoming County, Clear Fork District, Walls Branch of Clear Fork of Guyandot River, 0.65 mile northwest of mouth of the branch, 1255′ B-A. T., old coal opening east side of branch Kanawha Group, Gilbert Shale.

76.* Wyoming County, Clear Fork District, Cedar Creek of Clear Fork of Guyandot, 2.2 miles north of mouth of the creek, 1645′ B-A. T. Kanawha Group, Little Eagle Coal roof.

77. Wyoming County, Huff Creek District, public road, head of Little Cub Creek, 0.6 mile southwest of Botsford, 1435′ B-A. T. Kanawha Group, Eagle Shale.

78. Wyoming County, Oceana District, 2005′ B-A. T., on hill north of Clear Fork, on trail leaving public road 0.4 mile northwest of Crany P. O. Kanawha Group, Eagle Shale.

79.* Wyoming County, Oceana District, 0.1 mile northwest of Clear Fork Gap on Guyandot Mountain, old coal mine side of road, 2570′ B-A. T. Kanawha Group, Cannelton Limestone (Matewan Coal roof).

80.* Raleigh County, Trap Hill District, roadside 0.15 mile east of Clear Fork Gap on Guyandot Mountain, 2630′ B-A. T. Kanawha Group, Eagle Limestone.

81.* Wyoming County, Oceana District, 0.1 mile north of mouth of Knob Fork of Clear Fork of Guyandot River, west side of stream 0.2 mile west of Knob Fork School, 1940′ B-A. T., coal drift, Kanawha Group, Gilbert Shale.

82.* Wyoming County, Slab Fork District, Otter Fork of Laurel Fork of Clear Fork of Guyandot River, 0.7 mile above mouth of the stream, 1990′ B-A. T., coal drift. Kanawha Group, Douglas Shale (Lower Douglas Coal roof).

83.* McDowell County, Sandy River District, 1005′ B-A. T., on road on point west side of Shortpole Branch of Tug Fork of Big Sandy River, at mouth of branch. New River Group, Douglas Shale, (Lower Douglas Coal roof shale).

84.* Mingo County, Stafford District, 1280′ B-A. T., on hillside 0.25 mile north of mouth of Fourpole Creek of Tug Fork of Big Sandy River, Kanawha Group, Eagle Limestone.

85.* Mingo County, Stafford District, Turkey Creek, 0.6 mile northeast of mouth of Star Fork, 1233′ L-A. T., ditch on hill east side creek above mine pump house. Kanawha Group, Eagle Shale.

86. McDowell County, Sandy River District, Left Fork of Road Fork of Bull Creek, 4 miles southwest of Panther, roadside, 1500′ B-A. T. Kanawha Group, Eagle Shale fossils.

87.* Mingo County, Magnolia District, cut of N. & W. R. R., 755′ L-A. T., ½ mile east of Delorme Station and at north end of railroad bridge over Tug Fork (at U. S. G. S. B. M. "727") to Freeburn Colliery. Kanawha Group, Eagle Shale.

88. Roof shale of Little Cedar Coal at above locality, and probably to be considered the lowest portion of the Eagle Shale.

108.* Raleigh County, Shady Spring District, 1920′ B-A. T., Royal Mining Company's plant at Royal. Pocahontas Group, Royal Shale (Type Locality).

109* Raleigh County, Clear Fork District, C. & O. R. R. cut, 960′ L-A. T., just west of Four States Mining Company's plane at Dorothy Mine, Dorothy. Kanawha Group, Dorothy Shale. (Type Locality) (Gilbert Shale).

110*. Raleigh County, Clear Fork District, 1243′ L-A. T., Dorothy Mine plane, Dorothy, Kanawha Group, Eagle Coal roof shale.

111.* Raleigh County, Clear Fork District, 1531′ L-A. T., Dorothy Mine plane, Dorothy, Kanawha Group, Seth Limestone.

112.* Raleigh County, Clear Fork District, 1601′ L-A. T., Dorothy Mine plane, Dorothy, Kanawha Group, Dingess Shale (2 layers).

113.* Raleigh County, Clear Fork District, 1805′ L-A. T., Dorothy Mine plane, Dorothy, Kanawha Group, Winifrede Limestone and Shale.

114.* Boone County, Sherman District, C. & O. R. R. cut, 0.8 mile west of High Coal, and just north of a fill over a creek flowing into Seng Creek from the southeast, Kanawha Group, Seth Limestone.

117.* Mingo County, Lee District, town of Williamson, hillside south of Williamson Creek, coal mine of Superior Thacker Coal Co., 0.25 mile east of mouth of creek, Kanawha Group, Dingess Limestone.

118.* Buchanan County, Virginia, Rock Lick District, ridge opposite mouth of Turkey Creek at War Eagle, Mingo County, Stafford District, W. Va., 0.3 mile west from mouth of creek, 1275′ B-A. T., Kanawha Group, Eagle Shale.

119.* Mingo County, Magnolia District, 0.5 mile northwest of mouth of Mate Creek at Matewan, 1205′ B-A. T., hillside north of Matewan, Kanawha Group, Dingess Limestone.

120.* Logan County, Triadelphia District, east side of Guyandot River hillside above public road, 810′ B-A. T., 0.3 mile northeast of mouth of Sandlick Branch and 3.4 miles south of Man, Kanawha Group, Eagle Shale.

121.* Mingo County, Stafford District, ridge east of Glenalum Junction on N. & W. R. R., 1055′ B-A. T., over the railway tunnel, 0.2 mile north of the Junction, Kanawha Group, Eagle Shale.

122.* Boone County, Crook District, west bank of Casey Creek, 0.3 mile above its junction with Pond Fork on point south of mouth of first right hand branch of the creek, 895′ B-A. T., Kanawha Group, Dingess Limestone.

124.* Lincoln County, Harts Creek District, north of road along Big Ugly Creek, 0.7 mile east of mouth of Trace Branch, and 0.1 mile west of junction of this road and secondary road up hill to head of Lukey Fork of Mud River, and 0.2 mile from Boone County Line, 935′ B-A. T., Kanawha Group, Dingess Limestone.

125.* Raleigh County, Slab Fork District, Tommy Creek; coal outcrop in north bank of creek, 2.4 miles west of Odd, Pocahontas Group, roof shales of No. 3 Coal.

126.* McDowell County, North Fork District, 1700′ B-A. T., north side of Elkhorn Creek at North Fork Station on N. & W. R. R. cut just west of railroad bridge over Elkhorn Creek, 0.2 mile below mouth of North Fork, Pocahontas Group, North Fork Shale, (Type Locality).

127.* Wyoming County, Oceana District, hillside northwest of Oceana, 1615′ B. coal prospect, 0.3 mile from crossing of county road over Dry Branch, Kanawha Group, Little Eagle Coal, roof shale.

128.* Raleigh County, Trap Hill District, roadside 0.5 mile east of Clear Fork Gap on Guyandot Mountain, 2335′ B-A. T., Kanawha Group, Gilbert Shale.

129.* Wyoming County, Oceana District, hillside above Laurel Fork 0.9 mile southwest of mouth of Clear Fork, 1725′ B-A. T., not in place, Kanawha Group, Eagle Shale.

130.* Raleigh County, Marsh Fork District, Peachtree Ridge, northern end, 0.4 mile west of Dry Creek P. O., west side of hollow in end of ridge, Kanawha Group, Gilbert Shale.

131.* Raleigh County, Marsh Fork District, Indian Gap, southeast of gap on hillside, 2655′ B-A. T., 50 yards southeast of gap and 27′ B. above gap, Kanawha Group, "Indian Gap Limestone," Winifrede Limestone?

140.* Fayette County, Kanawha District, town of Crescent, "3 feet over Campbell Creek Coal," Pottsville Series, Kanawha Group, Campbell Creek Limestone.

141.* Boone County, Sherman District, mouth of Stover Branch of Coal River in road bank, 2 horizons 18 feet apart, Kanawha Group, Campbell Creek Limestone.

DESCRIPTION OF SPECIES.*

*The following abbreviations are used in this report: "a," abundant; "aa," very abundant; "c," common (where no symbol follows the description of the locality, the species is rare); "W. V. U." Museum of West Virginia University; "W. V. G. S.," Collection of West Virginia Geological Survey.

COELENTERATA

SPONGIAE

Genus CLIONOLITHES Clarke

Clionolithes canna sp. nov.

Plate xxx, Fig. 1.

Description.—Fine tubules, freely branching and anastomosing, so as to form an irregular mat sometimes of several strands thickness; tubules varying slightly in thickness, from 0.16 to 0.25 mm. in diameter, seldom unbranched for as much as 2 mm. in length; branches straight, slightly curved, crescentic, or a little sinuous. The tubes are preserved as casts of the interior, the test having been leached out. Only two specimens are at hand. A cast of *Derbya crassa* was covered with a network a single thread in thickness, but unfortunately many tubes were lost in separating the specimen from the matrix. A thick mat of tubes covers a fragment of an indeterminate shell. These tubes are set within the shell substance and communicate at their ends with the exterior.

I have referred these remains to *Clionolithes,* a genus of Paleozoic sponges based entirely on such borings. *C. reptans,** from the Devonian, is a similar species exhibiting "threadlike vermiform tubes which wander at random through the shell substance of both brachiopods and pelecypods." Clarke, 1908. Our species has shorter tubes, which are less sinuous and much larger than those of *reptans.* I am assuming, from the statement, "Greatly enlarged,"† that Clarke's figure is magnified considerably more than 6 or 7 diameters (which enlargement would make the tubes of equal diameter with ours).

Derivation of specific name: Greek *kanna,* a mat of reed or cane.

Occurrence.—Conemaugh Series, BRUSH CREEK LIMESTONE, Preston County, Locality 33; Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 133.

Collection.—American Museum of Natural History.

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*Clarke, J. M., 1908, The beginnings of dependent life. New York State Ed. Dept., 4th Ann. Rept. Dir. Sci. Div., adv. sheets, p. 27, pl. xi, figs. 1 and 2.

†Loc. cit., p. 50.

VERMES.

CHAETOPODA.

Genus SPIRORBIS Daudin.

Section MICROCONCHUS Murchison.

Spirorbis (Microconchus) pusillus (Martin).

Plate xxxi, Fig. 6.

Conchyliolithus (Helicites) pusillus. Martin, 1809, Petref. Derbiensia, pl. lii, f. 2, 3.

Description.—Shells and casts of this tiny species are found singly, either free or attached to pelecypod shells of several species, or in colonial clusters on these shells. The spiral form with one and a half turns, the fine, irregular, transverse striae gathered at intervals into more prominent wrinkles, present a form apparently in no way dissimilar from those described under this name from younger strata in the Pennsylvanian.[1]

They are found in abundance attached to shells of *Naiadites elongata, Myalina perniformis,* and *Deltopecten flabellum.*

Occurrence.—Kanawha Group, Roof Shale of Little Eagle Coal, Wyoming County, Locality 76. Pocahontas Group, North Fork Shale, McDowell County, Locality 126(a).

Collections.—W. V. G. S. and W. V. U.

ECHINODERMATA.

CRINOIDEA.

Crinoidea indeterminata.

Description.—Segments of crinoid columns; small, short, detached, columnar segments.

Occurrence.—Kanawha Group, Winifrede Limestone, Kanawha County, Locality 68; Raleigh County, Locality 113; Camp-

[1]Conemaugh Series, West Virginia Geological Survey, Preston County Report, 1914; p. 489.

BELL CREEK LIMESTONE, Boone County, Locality 141; SETH LIMESTONE, Boone County, Locality 114.

Collection.—W. V. G. S.

MOLLUSCOIDEA.

BRYOZOA.

Bryozoa indeterminata.

Description.—Two fragments of a fan-like bryozoan mat, specific relationships not determined.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113.

Collection.—W. V. G. S.

BRACHIOPODA

Genus LINGULA Bruguiere.

Three forms of the genus *Lingula* are known in the Pennsylvanian rocks of West Virginia. *L. umbonata*, first described by Cox from the Coal Measures of Kentucky, has been described from two of the limestones of the Conemaugh Series,* from the Kanawha Black Flint† and from the Eagle Limestone‡ of the Kanawha Group. These shells are oval in outline and small in size, varying in length from 3.5 to 13.0 millimeters. Associated with this species, at least at one locality,§ is a larger, subquadrate form, 22 mm. in length, which has been described as *L. kanawhensis*. Below the Kanawha Black Flint, which lies near the top of the Kanawha Group,|| this species has been found in the roof shales of several coals of the Group. In these lower measures the shell is shorter, ranging from 14 mm. in height to minute sizes. Among the medium-sized individuals referred to this species there are some oval forms and it is possible that *L. umbonata* is repre-

*West Virginia Geol. Survey, 1914; Preston County Rept., p. 490.
†West Virginia Geol. Survey, 1914; Kanawha County Rept., p. 646.
‡West Virginia Geol. Survey, 1915; Boone County Rept., p. 598.
§West Virginia Geol. Survey, 1914; Kanawha County Rept., p. 647.
||Loc. cit., p. 640.

sented, but as the subquadrate is the dominating form in each collection and all are of very nearly the same shape it is not thought profitable to separate the material into two species in this case.

In one collection (Locality 80) from the Eagle Limestone appears a third form. It is small, broadly oval, subcircular, pointed at the beak, and is present in abundance, being the only species of the genus found at this locality. It is here described under the name of *L. lemniscata.*

Lingula kanawhensis Price.

Plate xxx, Fig. 2.

Lingula kanawhensis. Price, 1914, West Virginia Geol. Survey Rept. Kanawha County, p. 647, pl. i (of part iv), figs. 5 and 6.
Kanawha Group: Queen Shoals, Kanawha County, West Virginia.

Description.—This transversely subquadrate species is here illustrated in typical size and form. In the smaller sizes a variation toward an oval type is common and it frequently becomes difficult to determine whether to place a given specimen in this species or in *L. umbonata.* The majority of specimens are, however, quite distinct from the smaller, oval species.

Occurrence.—Kanawha Group, Seth Limestone, Boone County, Locality 114; Cannelton Limestone, Wyoming County, Localities 73(aa), 79(aa); Campbell Creek Limestone, Fayette County, Locality 140(a); Roof Shale of Eagle Coal, Raleigh County, Locality 110(aa); Wyoming County, Locality 75(aa); New River Group, Douglas Shale, McDowell County, Locality 83(aa); Wyoming County, Locality 82(aa).

Collections.—W. V. G. S. and W. V. U.

Lingula lemniscata sp. nov.

Plate xxx, Fig. 3.

Description.—Minute, broadly oval to subcircular, compressed linguloid shells. Anterior portion circular in the smaller individuals, more narrowly rounded in larger shells. Posterior portion tapering toward the umbo. Lateral margins slightly curved, ap-

proaching very nearly to a right angle. The shell has almost the shape of the area outlined by a circle and two tangents which meet in a right angle, and exactly the shape of the lemniscate curve, from which the specific name is given. Beak minute, pointed, down curved, ending at the hinge line. Umbonal region slightly elevated. Surface covered with concentric lines of growth, which are slightly variable in prominence; larger lines rather widely spaced with numerous, fine lines between. Interior showing the coarser lines of growth and a short, low, median septum in the visceral region.

Measurement of three specimens:

Length, mm.	Width, mm.	
5.50	4.50	(figured specimen).
4.50	3.00	
3.75	2.50	

Greatest width anterior to the middle.

Our specimens are casts of the interior and exterior of the valves, the test having disappeared. The impressions, however, exhibit the usual polished appearance of shells of Lingulas.

From *L. umbonata* Cox, this species differs in being smaller, more pointed posteriorly, more nearly circular anteriorly and in having a less finely striated surface.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Raleigh County, Locality 80(aa).

Collections.—W. V. G. S. and W. V. U.

Genus ORBICULOIDEA d'Orbigny.

Orbiculoidea missouriensis (Shumard).

Discina missouriensis. Shumard, 1858, St. Louis Acad. Sci., Trans., vol. i, p. 221.
Middle Coal Measures: Lexington and Charbonniere, Missouri.

Description.—This minute species seems to be represented in our collections, though associated at two localities with *O. capuliformis* and difficult to distinguish from immature examples of that species.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113 (c); ROOF SHALE OF LITTLE EAGLE COAL, Wyoming County, Locality 76; EAGLE LIMESTONE, Fayette County, Locality 63(c).

Collections.—W. V. G. S. and W. V. U.

Orbiculoidea capuliformis (McChesney).

Discina capuliforma. McChesney, 1860, Desc. New Pal. Fossils, p. 72.
Coal Measures: Springfield, Illinois; 12 miles northwest of Richmond, Missouri.

Discina capuliformis. McChesney, 1868, Chicago Acad. Sci., Trans., vol. i, p. 23 pl. ii, fig. 20.
Coal Measures: Springfield, Illinois; 12 miles northwest of Richmond, Missouri.

Description.—Subcircular, dome-shaped, concentrically striated shells, associated with the above but larger, less convex and more coarsely striate.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113; CAMPBELL CREEK LIMESTONE, Boone County, Locality 141; EAGLE LIMESTONE, Fayette County, Locality 63(c), Raleigh County, Locality 80(c).

Collections.—W. V. G. S. and W. V. U.

Genus CRANIA Retzius.

Crania modesta White and St. John.

Crania modesta. White and St. John, 1868, Chicago Acad. Sci., Trans., vol. i, p. 118.
Upper Coal Measures: Freemont County, Iowa.

Description.—On casts of *Productus nodosus* are found slightly elevated, oval casts of attached valves of this species. The impressions are from 5 to 8 millimeters in diameter and reproduce the markings of the host, though slightly contorted. Three shells of *Crania modesta* are found on a single pedicle valve.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Kanawha County, Locality 67.

Collection.—W. V. G. S.

Genus SCHIZOPHORIA King.

Schizophoria altirostris (Mather).

Plate xxx, Figs. 4-6.

Rhipidomella altirostris. Mather, 1916, Sci. Lab. Denison Univ., Bull., vol. xviii, p. 143, pl. viii, figs. 5, 5c.
Hale Formation: East Mountain, Fayetteville, Arkansas.

Description.—"Shell below medium size, sub-pentagonal in outline, length and breadth sub-equal, the hinge line about half as long as the greatest width, the latter occurring half way between the anterior margin and mid-length of the shell. The dimensions of the holotype, a pedicle valve, are: length, 16 mm.; width, 17 mm.; length of hinge-line, 8.3 mm.; height of cardinal area, 4 mm.; convexity of pedicle valve, about 6 mm.

"Pedicle valve convex, the greatest convexity posterior to the middle, the surface sloping from the umbonal region very abruptly toward the cardinal extremities, toward the anterior and anterio-lateral margins, the surface curving very gently at first but very strongly near the margins; beak broad, projecting very slightly beyond the cardinal area, incurved; cardinal area about half as high as wide, triangular, horizontally striated, sharply defined from the umbonal slopes, cardinal angles obtuse, delthyrium about twice as high as wide, occupying the middle fourth of the area; mesial sinus originating in front of the umbo as a broad, shallow, rounded, undefined depression which becomes more conspicuous near the anterior margin; surface apparently devoid of radiate markings, although this may be due to the preservation of the available material, concentric growth lines conspicuous especially near the anterior and lateral margins of the valve. Hinge teeth large, deflected outward from the hinge line at the base of the cardinal area.

"Brachial valve and internal characters unknown." Mather, 1916.

A large number of molds of small, flattened, crushed and marginally incomplete shells plainly belonging to *Schizophoria*, as determined from the muscle markings, represent this species, which was based upon a single pedicle valve. This shell was as-

sociated with others identified by Mather as *S. resupinoides.** The latter he notes from the Morrow Group at many localities. G. H. Girty† has in manuscript a forthcoming review of these identifications, in which he points out that figures 6, 7, 7a, and 7b of Plate viii of Mather's paper represent shells which should be referred to *altirostris:* figure 8 of the same plate, showing a much larger shell, which is presumably *S. resupinoides.* Both species belong to the genus *Schizophoria,* as determined by Mather in the case of the specimens incorrectly referred to *resupinoides,* and as determined from specimens collected by the reviewer from the same area as Mather's localities. Our small molds are likewise associated with others, differing from them in no way, so far as may be determined from the material in hand, except in size. Our largest specimen has almost twice the length of the holotype of *altirostris,* yet is 10 mm. shorter in this dimension than Mather's figure 8, the latter being almost exactly the size described by Cox for his species. These larger specimens are, with some doubt, referred to Cox's species. The smaller ones exhibit radial markings on the exterior of the valves similar to those of *resupinoides.* The interior of the pedicle valve shows a broadly ovate muscular impression, sharply defined posteriorly by elevated ridges which become obsolete anteriorly, and divided by a faint medial ridge. Vascular markings radiate anteriorly from the muscular impression but soon become obsolete, the anterior surface being covered with regular, radiating grooves and striae which become most clearly defined at the front margin. From casts of the interior of the brachial valve the muscular impression appears to have been a sub-triangular, heart-shaped, depressed area divided into two lobes by a raised median septum. The borders are also sharply raised and two or three concentric folds appear in the depression. From the borders of the muscular impression the crura diverge and are erect. Vascular markings radiate from the muscular impression as in the other valve. The mold of the muscular area in this valve is not completely surrounded by a deep groove; but in the large individuals associated with the small shells the groove completely surrounds the area, denoting a con-

*Loc. cit., p. 145, pl. viii, figs. 6 to 8.
†Oral communication.

tinuous, raised ridge joining the anterior ends of the crura. In these shells, here doubtfully identified as *S. resupinoides?*, the groove is defined throughout its extent, but earlier grooves, preserved in the muscular area as concentric growth lines, are faint or obsolete. This may indicate either that the ridges were resorbed by the growing muscles or that they gradually increased in prominence as the animal approached maturity. Probably both conditions existed. The smaller shells, which I am calling *S. altirostris*, show faint connecting grooves, or lack of them entirely. Absence of this feature is in most cases accompanied by a narrowing of the wedge-shaped muscular area. It is possible that a third species is involved, but the condition of the material and the consequent uncertainty as to the appearance of the exterior and the contour of the shell, render it unadvisable to attempt a division at this time.

The largest specimen referred to this species has the following dimensions: Length, 22 mm.; width, 26 mm. This is above the average size, which is shown in the figured specimens. The larger specimens of this species approach in size those referred to *resupinoides ?* and the dividing line is not distinct.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(aa); EAGLE LIMESTONE, Fayette County, Locality 63(aa).

Collections.—W. V. G. S. and W. V. U.

Schizophoria resupinoides (Cox)?

Plate xxx, Figs. 7 and 8.

Orthis resupinoides. Cox, 1857, Kentucky Geological Survey; vol. iii, p. 570, pl. ix, figs. 1, 1a and 1b.
Coal Measures: Hawesville, Hancock County, Kentucky.

Description.—Hinge line straight; less than the width of the shell; cardinal area well marked, gradually sloping back on the receiving valve; large angular foramen; both valves covered with fine thread-like striae, radiating from the beaks to the circumference, numbering on the disk thirteen in 0.12 of an inch, crossed by fimbriating lines marking stages of growth; obsolete on the umbo; well marked and more numerous from the base for one-third the length; receiving valve moderately convex; greatest

depth at the umbo; beak small, acute, elevated above and gradually sloping, with a slight depression to the sides; entering valve remarkably ventricose, and a little longer than the receiving valve; greatest depth at the disk; a very obscure shallow sinus is perceptible, running from the rostrum to the disk, where it is lost or obliterated by the crushed condition of the base of the shell; surface ornamented with five or six broken spines, two lines in diameter and about the same height, and several scars of missing spines; beak very tumid, acutely terminated, slightly incurved, moderately arched on the cardinal margin; sides obtusely rounded, broad and distinctly marked by rugose fimbriating lines of increment; width, 1.86 inches; length, 1.54 inches; hinge line, 1.02 inches; depth of receiving valve, 0.35 inch; depth of entering valve, 0.95; width of cardinal area, 0.12 inch; depth, 0.07 inch.

Though several authors have suggested the appearance of scars left by spines, on some species of *Orthis*, this is believed to be the first specimen of the genus upon which they have actually been found attached.

The great convexity of the entering valve, the obtuseness of both valves at their lateral border, and the greater prolongation of the entering valve, distinguishes this species from the *O. resupinata* (Mart. sp.), to which it is most nearly related." Cox, 1857.

This species has been discussed above while describing the shells here referred to *S. altirostris*, from which it differs chiefly in being larger. The dimensions of the figured specimen, which well represents the species as it is exhibited in our collections, are: Length, 30 mm.; width, 35 mm.; convexity (flattened shell), 6.5 mm.+.

The muscular impression of the brachial valve of a large specimen measures: Length, 9 mm.; width, 8 mm. An unusually long, wedge-shaped impression measures: Length, 10 mm.; width, 5 mm.

As good specimens of *S. resupinoides* have not been available for comparison, and as all our material is in the form of imperfect molds, from which the shape of the shell can not be determined with certainty, the identification is not made with confidence. Furthermore, there seems to be no sharp line of distinction between the shells referred to this species and those placed with *S. altirostris*.

Minute casts of the pedicle valve of a *Schizophoria* associated with the foregoing two species are supposed to be immature individuals belonging to one or both of them.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 63(a); EAGLE LIMESTONE, Fayette County, Locality 113.

Collections.—W. V. G. S. and W. V. U.

Genus DERBYA Waagen.

Derbya crassa (Meek and Hayden).

Orthisina crassa. Meek and Hayden, 1858, Acad. Nat. Sci., Philadelphia, Proc., p. 261.
Coal Measures: Leavenworth, Kansas.

Description.—This well-known species is found in abundance at two localities. The shells are of medium size, with a length of 22 mm. and a width of 30 mm. in the larger specimens. The test of one specimen was riddled with minute tubes of a boring sponge, described in this report under the name of *Clionolithes canna.*

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68, Raleigh County, Locality 113(aa); SETH LIMESTONE, Boone County, Locality 114(a); EAGLE LIMESTONE, Fayette County, Locality 63(a).

Collections.—W. V. G. S. and W. V. U.

Genus CHONETES Fischer de Waldheim.

Chonetes granulifer Owen.

Chonetes granulifera. Owen, 1852, Geol. Survey, Wisconsin, Iowa, and Minnesota, Report, p. 583, pl. v, fig. 12.
Carboniferous limestone: Near mouth of Keg Creek.

Description.—This species, so abundant in Conemaugh faunas of West Virginia, is here for the first time described from the Kanawha Group. Previous determinations of *Chonetes* in this group have been based on a few poorly preserved shells. The material in hand shows no differences from *C. granulifer,* and it seems from a comparison of the specimens that there is in our collections only one species of *Chonetes* from the Kanawha

Group. I would therefore place in the synonymy of this species the following descriptions in County Reports of the West Virginia Geological Survey:

Chonetes sp., Kanawha County Rept. 1914; p. 650.

Chonetes variolatus. Boone County Rept. 1915, p. 601, pl. xlii, figs. 7 and 8.

Chonetes variolatus, Lewis and Gilmer Counties Rept., 1916, pp. 625, 626.

The ornamentation on which the identification of the material described in the report on Boone County was based appears to be due to exfoliation and may be found on exfoliated specimens of *C. granulifer*.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(a); EAGLE LIMESTONE, Fayette County, Locality 63(c).

Collections.—W. V. G. S. and W. V. U.

Genus PRODUCTUS Sowerby.

Productus semireticulatus (Martin).

Anomites semireticulatus. Martin, 1809, Petref. Derbiensia, p. 7, pl. xxxii, figs. 1, 2; pl. xxxiii, fig. 4.

Description.—This widespread and well known brachiopod is represented in our collections by specimens showing the characteristic form and sculpture of the species. Exfoliated specimens of the pedicle valve have the concentric ribs relatively exaggerated due to the apparent absence of radial markings. These specimens might readily be mistaken for a *Pustula*.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(a); SETH LIMESTONE, Boone County, Locality 114.

Collections.—W. V. G. S. and W. V. U.

Productus nodosus Newberry.

Plate xxx, Figs. 9-11.

Productus nodosus. Newberry, 1861, Ives' Expl. and Survey Colorado River of the West, pt. iii, p. 124, pl. i, figs. 7a and 7b. Carboniferous limestone: Sante Fe, New Mexico.

Description.—"Shell of medium size, strongly revolute; antero-posterior diameter less than its breadth; beak pointed, ex-

tending slightly beyond the cardinal border; wings very small much plaited, like the entire surface of the ventral valve, covered with numerous fine, distinct and uniform thread-like striae; ventral valve without sinus, but the mesial line is marked by a row of large and remote nodes, which extend from the beak to the anterior margin, and toward which the contiguous striae converge. The striae are scarcely more numerous on the anterior border than on the beak; a few are introduced without bifurcation, but the increased space is covered by a gradual enlargement of the striae and a widening of the space between them. Visceral region arched and without reticulation; entire surface spineless, unless the nodes of the mesial lines are the bases of large spines. Dorsal valve striated like the ventral, often without nodes or spines." He states that this species differs from *P. cora* "by the entire absence of spines, the parallel and uniform striae, and particularly by the row of nodes along the mesial line." Newberry, 1861.

Newberry further described the same form in Macomb's report* as follows: "The figures now given of it will convey a much better impression of its true character than those before published. From these it will be seen that, with a near approach in form and markings to *P. cora* and *P. aequicostatus*, it is distinguished from these and other species by the single line of conspicuous nodes, the bases of large spines, which mark the median line of the ventral valve. In some specimens a corresponding line of tubercles marks the dorsal valve; but they are always less distinctly marked and are often entirely wanting." He also notes "a somewhat remarkable variation in the length of the cardinal border, but the wings are usually quite short."

The species has since been recorded only by White,† who reports, under the caption: *Productus Prattenianus* Norwood, as follows: "Some of the specimens possess the median row of spines or nodes upon the ventral valve, like those which Dr. Newberry named *P. nodosus*."

*Descriptions of the Carboniferous and Triassic fossils collected on the San Juan Exploring Expedition under Capt. J. N. Macomb, U. S. Engineers, by J. S. Newberry, 1876, p. 140, pl. iii, figs. 3, 3d, (in Rept. Expl. Expd. Santa Fe to Junct. Grand and Green Riv., Engn. Dept., U. S. A.).

†White, C. A., 1876, U. S. Geol. and Geog. Surv. Terr., 2nd Div., Powell's Rept. Geol. Uinta Mts., p. 90, list, No. 24.

Our shells exhibit the features described by Newberry and have an appearance similar to that presented by his figures. In form our specimens are mostly narrow, with small ears, but wide examples are also found. Crushing has destroyed the ears in the majority of cases. The anterior portion is expanded beyond a slight geniculation, which is not mentioned by Newberry, but which is shown in his illustrations. At this geniculation the costae become finer and more closely spaced, and are increased in number by the implantation of additional ones. A few of the concentric wrinkles of growth, so characteristic of *P. cora*, and noted by Newberry as plaits upon the ears, are faintly produced from the lateral portions of the shell and cross the expansion described above. Nearly all specimens which preserve this expansion possess a median constriction of the shell which may be the beginning of a keel, as in *P. insinuatus*, or may be due entirely to crushing. The direction of the minute, concentric striae, which in well preserved specimens are seen to cross the costae, indicates a marginal sinus similar to that of the last named species. A keel, however, if developed, appeared later in the growth of the shell than in the case of *P. insinuatus*. At the base of each spine there is a convergence of as many as seven or eight costae, the inner ones meeting in a point and the outer two passing on each side tangent to the raised node from which the spine proceeds and continuing anteriorly to meet and merge with others in the node of the next spine. In this way all the costae which cover the summit of the umbonal region posterior to its highest point are lost before reaching the anterior margin.

The dorsal valve is frequently marked with a rounded, median groove or a succession of such grooves, simulating grooves made by recumbent spines.

Fragmentary shells in which the median portion is more or less obscured by crushing and fracturing, but which show the paucity of spines, fineness and regularity of costae, the somewhat narrow shell and pointed beak of this species, have been previously described from the Kanawha Group of Boone County by the writer.* They were referred to *P. cora*, but were noted as departures from the usual form of that species. These shells are

*West Virginia Geol. Survey, Rept., Boone County, 1915; p. 604, pl. xlii, fig.3.

doubtless to be referred to *P. nodosus*. The statement, made in connection with the description of these specimens,† that the departures noted "are characteristic" . . "of all the shells of this type [type of the group: *P. cora*, *P. ovatus*, *P. pileiformis*, etc.] from the Kanawha Series which have so far come to hand" holds true to date, with the exception of *P.* cf. *cora* from the Kanawha Black Flint of Kanawha County,* which shows the larger costae of *P. cora* with numerous spines freely scattered over the surface.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Boone County, Locality 122(c); Kanawha County, Locality 67; SETH LIMESTONE, Boone County, Locality 114(aa); EAGLE LIMESTONE, Fayette County, Locality 63(?). Raleigh County, Locality 80(?).

Collections.—W. V. G. S. and W. V. U.

Productus sp.

Description.—Fragment of a cast of a much exfoliated shell. Shows striae coarser than those of the associated species, *P. nodosus*, and growth lines which appear to have crossed the anterior visceral region.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Kanawha County, Locality 67.

Collection.—W. V. G. S.

Genus PUSTULA Thomas.

Pustula symmetrica (McChesney)?

Productus symmetricus. McChesney, 1860, New Pal. Foss., p. 35.
Upper Coal Measures: LaSalle and Springfield, Illinois.
Productus symmetricus. McChesney, 1868, Ill. New Spec. Foss., pl. i, figs. 9a-b.
Upper Coal Measures: LaSalle and Springfield, Illinois.

Description.—A fragment of a brachial valve, with regular concentric wrinkles of growth, resembles shells of this species, but may belong to some similar spinose type.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114.

Collection.—W. V. G. S.

†Loc. cit., p. 605.

*West Virginia Geological Survey, Rept., Kanawha County, 1914; p. 651.

Genus MARGINIFERA Waagen.

Marginifera wabashensis (Norwood and Pratten).

Productus wabashensis. Norwood and Pratten, 1854, Acad. Nat. Sci., Philadelphia, Jour., 2nd ser., vol. iii, p. 13, pl. i, figs. 6a-d. (Imprint of whole volume, 1855).
Coal Measures: Near New Harmony, Indiana.

Description.—This species is abundantly represented in the fossiliferous sandstone at Eagle, Fayette County, and is perhaps its most conspicuous fossil. The material consists largely of iron stained casts of the interior and exterior of the valves. The shells are undersized, and resemble those described under this name from Boone and Logan Counties,[1] but are generally without a median sinus, or with only a faint suggestion of such a feature. Casts of the interior of the pedicle valve show an irregularly pitted surface with about eight irregular, branching ridges radiating from the umbonal region and becoming obsolete as the point of maximum concavity of the shell is reached.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(aa); SETH LIMESTONE, Boone County, Locality 114; EAGLE LIMESTONE, Fayette County, Locality 63(aa).

Collections.—W. V. G. S. and W. V. U.

Genus SPIRIFER Sowerby.

Spirifer boonensis Swallow?

Spirifer boonensis. Swallow, 1860, St. Louis Acad. Sci., Trans., vol i, p. 646.
Lower Coal Measures: Boone, Randolph, and Monroe Counties, Missouri.

Description.—This species has been previously noted and figured from Kanawha[2] and Boone[3] Counties. From *Spirifcrina kentuckyensis* the young individuals of this species are distinguishable by their larger size, greater number of ribs, which are

[1]West Virginia Geol. Survey, Boone County Report, 1915; p. 605.
[2]West Virginia Geol. Survey, Kanawha County Rept., 1914; p. 652, pl. ii, figs, 1-3.
[3]West Virginia Geol. Survey, Boone County Rept., 1915; p. 609, pl. xlii, fig. 2

present on the sinus and varix as well as on the lateral portions, by the imperforate shell and by the absence of strong, imbricating concentric striae. Ten to thirteen plications appear on each side of the sinus and varix.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68; Raleigh County, Localities 113(a), 131; SETH LIMESTONE, Boone County, Locality 114(a); EAGLE LIMESTONE, Fayette County, Locality 63(c).

Collections.—W. V. G. S. and W. V. U.

Genus SPIRIFERINA d'Orbigny.

Spiriferina kentuckyensis (Shumard).

Spirifer octoplicata? Hall, 1852, Stansbury's Expl. and Survey Valley Great Salt Lake of Utah, p. 409, pl. iv, figs. 4a-b.
Carboniferous: Missouri River, near Weston.
Spiriferina kentuckyensis. Shumard, 1855, Geol. Survey, Missouri, 1st and 2nd Ann. Repts., pt. ii, p. 203.
Coal Measures: Missouri River, near Weston, and Grayson County, Kentucky.

Description.—This well-known species may be distinguished from *Spirifer boonensis?*, with which it is associated, by its small size, prominent ribs (5 to 8 in number on each side of the median sinus or varix), punctate shell, and the numerous fine, crowded, imbricating, concentric striae. Our material consists of casts of the interior and exterior surfaces of the valves. Of the two valves the pedicle is the one more frequently found.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(a); EAGLE LIMESTONE, Fayette County, Locality 63.

Collections.—W. V. G. S. and W. V. U.

Genus HUSTEDIA Hall and Clarke.

Hustedia multicostata var. virginiana var. nov.

Description.—A number of imperfect molds of a representative of the genus *Hustedia* are so closely related to *H. multicostata* Girty[1] and to *H. affinis* Girty, a manuscript species, that it has

[1]Girty, G. H., New Carb. Foss. from the Fayetteville Shale of Arkansas, New York Acad. Sci., Ann., Vol. xx, 1910; p. 222.

been difficult to arrive at a satisfactory conclusion as to their true position. They seem to be, in the number of costae upon the surface of the shell, intermediate between the two, but the fragmentary condition of the specimens renders it unadvisable to describe a new species. As a compromise it is referred to *H. multicostata* as a variety.

H. mormoni Marcou, *H. affinis*, the variety of *H. multicostata* here described and *H. multicostata*, in the order named, form an almost continuous series, differing only in the number of costae.

H. miseri Mather* should be mentioned in this connection. Dr. Girty,† who has in manuscript a review of Mather's report, has shown that two or more species are involved in the specimens referred by Mather to *H. miseri;* namely, *H. mormoni*, *H. affinis* and other material, some of which bears close resemblance to our variety. Girty restricts *miseri* to those specimens which fall within the limits of *mormoni*. We then have to consider only the following species, which are here arranged in a series, as specified above, with the number of costae appearing upon their surfaces written below the name of the species, the number on the average specimen, when known, being in italics:

H. mormoni.	*H. affinis.*	*H. multicostata.*
12-*15*-17	*19*-21	25-32

It will be seen that the variation in the number of costae within the species is not of equal range, the first having a variation of six costae, the second of three and the third of eight. The intervals between the species not covered by described forms are also unequal, as measured by number of costae. That between *H. affinis* and *H. multicostata*, namely, 22 to 24 costae, is, so far as it has been possible to determine from our material, bridged by the variety here described. Of the more complete specimens two have 12 costae upon the lateral surface of the brachial valve between the median sinus and the lateral margin. Other specimens indicate the presence of 22 to 24 costae upon the unbroken

*Mather, K. F., Fauna of the Morrow Group of Arkansas and Oklahoma, Bull. Sci. Lab. Dennison Univ., 1916; vol. xviii, p. 196, pl. xiii, figs, 4, 6c.

†Girty, G. H., Written communication.

shell. Because we have been able to make an accurate count upon so few specimens, the range in number of costae upon our shells can not be stated confidently, and it may be that more than one species or variety is involved. Because the variation in the number of costae of *multicostata* is greater than in the other species we have referred our variety to it, with the expectation that the study of additional material will make it possible to define a species in the interval provisionally occupied by the variety.

In all other particulars, so far as can be made out, these shells resemble *H. multicostata* and *H. mormoni.*

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113(a); EAGLE LIMESTONE, Fayette County, Locality 63.

Collection.—W. V. G. S.

Genus COMPOSITA Bronn.

Composita subtilita (Hall).

Terebratula subtilita. Hall, 1852, Stansbury's Expl. and Survey Valley Great Salt Lake of Utah, p. 409, pl. ii, figs. 1a, b, 2a, b.
Carboniferous: Missouri River, near Weston.

Description.—This abundant and widespread species is represented mainly by flattened casts.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68, Raleigh County, Locality 113(a), ROOF SHALE OF EAGLE COAL, Raleigh County, Locality 110; EAGLE LIMESTONE, Fayette County, Locality 63(a).

Collections.—W. V. G. S. and W. V. U.

MOLLUSCA.

PELECYPODA.

Genus SOLENOMYA Lamarck.

Solenomya radiata (Meek and Worthen).

Solemya radiata. Meek and Worthen, 1860, Acad. Nat. Sci., Philadelphia, Proc., p. 457.
Coal Measures: Grayville, Illinois.
Solenomya radiata. Meek and Worthen, 1866, Illinois Geol. Survey, vol. ii, p. 349, pl. xxvi, figs. 10a, b.
Coal Measures: Schuyler County, Illinois.

Description.—Several specimens of this well known species, showing no departures from the common form, are in our collections.

Occurrence.—Kanawha Group, Eagle Limestone, Raleigh County, Locality 80.

Collection.—W. V. G. S.

Genus SANGUINOLITES M'Coy.

Sanguinolites raleighensis sp. nov.

Plate xxx, Figs. 12 and 13.

Description.—Shell oval, transverse; ratio of length to height, 2.3 to 1; convexity very low, nearly flat, greatest in the middle of the shell; beaks scarcely elevated, placed about one-tenth the greatest width of the shell from the anterior margin; hinge line straight, equaling in length two-thirds the greatest width of the shell; dorsal margin sloping, at first gradually and finally more rapidly, downward and backward to the posterior margin, which is most extended at a point one-third the height from the basal margin and from here rounds narrowly into the latter; basal margin almost straight, slightly convex, rounding broadly into the anterior margin; greatest extension of the latter at a point one-third the height from the dorsal margin, where it is sharply rounded and heel-like; above this heel, the anterior margin is truncated and inclined to the hinge line, which it meets just in front of the beaks. Surface ornamented by fairly strong, regular, concentric, elevated corrugations, extending from the truncated upper third of the anterior margin across the body of the shell, but terminating abruptly or becoming weak and indistinct on reaching an oblique ridge which extends from the beak backward and downward across the shell to the posterior margin at a point just below its greatest extension. Post-umbonal region above this ridge almost smooth, traces of the concentric corrugations being found, but fewer in number than on the other portions of the shell; several more or less obscure radiating lines or ridges found in this region, the strongest of which lies just below the hinge line and causes a slight indentation in the dorsal margin where it begins to slope away to the posterior lateral margin; ante-umbonal

region flattened; a short, depressed, irregular furrow extending inward anterior to the beak in a direction vertical to the hinge line, bordering the flattened ante-umbonal region, but becoming obsolete on reaching the convexity of the umbo, and probably an accidental feature or representing a more pronounced ridge on the interior of the valve.

We know this shell only from a cast of the exterior of a left valve. The surface features may have been partly obscured during fossilization. Of described shells it resembles in many respects *Pleurophorus subcostatus* Meek and Worthen, but, as the latter is known only from casts of the interior, their relations are not certain. *Allerisma costatum* Meek and Worthen resembles this shell quite closely. From the description the following differences are noted: The beaks of our shell are only very slightly convex; its corrugations do not appear to be so regularly and sharply outlined, nor is the posterior lateral margin so distinctly truncated, but rather smoothly rounded; the anterior end having its heel-like angulation above the middle. No surface granules are visible. These differences are slight and may be exaggerated by the state of preservation of the shell. This species may therefore have to give way to *Allerisma costatum* Meek and Worthen when more specimens have been examined, or both may prove to be identical with *Pleurophorus subcostatus* when exteriors of that shell are found.

Dimensions: Height, 7 mm.; length, 16 mm.

Occurrence.—Kanawha Group, GILBERT SHALE, Raleigh County, Locality 128.

Collection.—W. V. G. S.

Genus PROTHYRIS Meek.

Prothyris carinata sp. nov.

Plate XXX, Figs. 14-16.

Description.—Shell thin, transversely elongate, depressed-convex, equivalent, small; hinge line almost straight, very slightly arched, equaling five-sevenths the length of the valves, curving rapidly into the posterior margin, which is inclined to the hinge

by an angle of about one hundred and twenty degrees, and slopes backward, forming with the ventral margin an acutely rounded angulation; ventral margin subparallel to the hinge line, slightly convex, especially in the anterior third of its extent; anterior end of shell short, its margin deeply indented at the extremity of a sharply defined and slightly elevated line which extends from a point just beneath and in front of the beak to the ventral margin; ventral margin rounding abruptly into the notch thus made, anterior to which the shell forms a wedge-shaped lobe equal in height to one-half that of the shell, the lobe being rounded anteriorly; beaks very near the anterior end, small, not prominent, terminating at the slightly elevated line which crosses the shell at this point. Surface of the shell ornamented by extremely fine, regular, closely-spaced, concentric striae, which are slightly less distinct in the posterior dorsal region, where they are crossed by equally fine, less distinct, radiating striae, which become obsolete as they approach the median line of the shell. In the umbonal region posterior to the beaks are traces of one or two short, irregular wrinkles, which on the inner surface of a left valve appear as distinct, rounded corrugations on a slightly raised muscle scar and are extended toward the ventral margin as very faint lines This scar occupies the umbonal concavity and is irregularly triangular in shape. The posterior dorsal region of the shell is crossed obliquely by a prominent, rounded, cord-like carina extending from the posterior umbonal region to the angulation at the base of the posterior lateral margin. At the carina the concentric striae bend abruptly toward the beaks on the posterior dorsal portion of the shell, where they are slightly sinuous. Above this carina is a broad depression or sinus widening posteriorly and separated from the hinge line by a broadly convex swelling, which defines a narrow depression extending along the hinge line, giving the appearance of a narrow, elongated and obscure escutcheon, the posterior portion of the shell thus having a somewhat fluted aspect.

Two shells of this species are in our collections. The smaller is represented by the impressions of the exterior of the valves, with the posterior and ventral margins incomplete, but indicated in position by the direction of the concentric striae; the larger

specimen showing the interior of a right valve, with margins somewhat damaged.

Dimensions of the larger shell: Height, 9 mm.; length, measured midway of the shell parallel to the hinge, 32 mm. Dimensions of smaller shell: Height, 3 mm.; length, measured as above, 13 mm.

The only other Pennsylvanian species of the genus known to the writer is *P. elegans* Meek, from which this is easily distinguished by its prominent carina as well as by its more oblique posterior extremity.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Mingo County, Locality 84; GILBERT SHALE, Raleigh County, Locality 128.

Collection.—W. V. G. S.

Genus SOLENOPSIS M'Coy.

Solenopsis solenoides (Geinitz).

Clidophorus solenoides. Geinitz, 1866, Carb. und Dyas in Nebraska, p. 25, pl. ii, fig. 7.
Dyas: Nebraska City, Nebraska.

Description.—A single shell of this small species has come to hand. It needs no description here.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Logan County, Locality 74.

Collection.—W. V. G. S.

Genus CHAENOMYA Meek.

Chaenomya leavenworthensis (Meek and Hayden).

Allorisma leavenworthensis. Meek and Hayden, 1858, Acad. Nat. Sci. Philadelphia, Proc., p. 263.
Coal Measures: Leavenworth, Kansas.

Description.—"Shell very thin, oblong, subcylindrical behind, more compressed anteriorly; posterior end broad, rather obliquely truncate, very widely gaping, or even dilated at the margins; buccal end narrowly rounded and nearly closed. Base almost straight, or but slightly convex, rounding up gradually in front and much more abruptly into the truncate posterior border. Dorsal outline concave from the beaks to its elevated posterior ex-

tremity. Beak moderately elevated, slightly flattened, more or less angular behind, incurved, and located about half way between the middle and the anterior end. Surface marked by obscure concentric undulations, which curve abruptly upwards parallel to the truncate anal margin; these undulations are crossed by radiating rows of very small granules, only visible by the aid of a lens." Meek and Hayden, 1858.

Both valves of an exfoliated shell answering to the above description are in our collection. They are about half the size of Meek's specimen, but have about the same proportions.

The minute granules can with difficulty be distinguished from other irregularities of the exfoliated surface, if indeed, they are still preserved entire, but in a strong cross light a faint radial arrangement of these irregularities is evident. From a comparison with undoubted specimens of *C. leavenworthensis*, the present identification seems confirmed.

Dimensions of right valve: Length, 19 mm.; height, 17 mm., thickness, 6 mm. Thickness of left valve, 5 mm.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114.

Collection.—W. V. G. S.

Genus EDMONDIA De Koninck.

Edmondia gibbosa (M'Coy).

Astarte gibbosa. M'Coy, 1844, Syn. Carb. Foss. Ireland, p. 55, pl. viii, fig. 11.
Carboniferous: Ireland.

Description.—Specimens showing the regular, lamellose, concentric ridges with the shell deeply excavated between; outline somewhat variable, from subcircular to transversely ovate; rather gibbous, with down-curved umbones.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114(a); EAGLE LIMESTONE, Fayette County, Locality 63.

Collections.—W. V. G. S. and W. V. U.

Genus NUCULA Lamarck.

Nucula anodontoides Meek?

Nucula (?) anodontoides. Meek, 1871, 3d Ann. Report Regents of West Virginia Univ. for 1870, "B," p. 71.
Coal Measures (Just below Mahoning Sandstone): Monongalia County, W. Va.

Description.—Two small, imperfect casts and one crushed specimen appear to belong to the species described under this name from the Conemaugh Series of Preston County, West Virginia,[1] but are slightly smaller and less transverse than the specimen figured. It is not certain that either the specimens in hand or those from Preston County are identical with Meek's species, as his types have not been seen.[2] The identification is, therefore provisional. The resemblance between our specimens and those figured by Girty[3] is so close that there is little doubt of the identity of the Oklahoma shells with ours.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Buchanan County, Virginia, Locality 118, Raleigh County, Locality 80.

Collection.—W. V. G. S.

Nucula parva McChesney?

Nucula parva. McChesney, 1860, Desc. New Pal. Foss., p. 54.
Coal Measures: Danville, Illinois.
Nucula parva. McChesney, 1865, Ill. New Spec. Foss., pl. ii, figs 8a-c.

Description.—A few small shells, none entire, belong to this or a closely allied species. As we have only imperfect specimens, the identification is uncertain.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68; SETH LIMESTONE, Boone County, Locality 114; EAGLE LIMESTONE, Buchanan County, Virginia, Locality 118.

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[1]West Virginia Geol. Survey, Preston County Rept., 1914; p. 511, pl. xliii, figs. 15-17.

[2]Op. cit., p. 513.

[3]Girty, G. H., 1915; Fauna of the Wewoka Formation of Oklahoma, U. S. Geol. Survey, Bull. No. 544, p. 111, pl. xiii, figs. 1-5. Fig. 2a shows an internal cast similar to our specimens from Raleigh County and from Buchanan County, Va.

Genus LEDA Schumacher.

Leda arata (Hall).

Nucula arata. Hall, 1852, Stansbury's Exped. Great Salt Lake, Utah, p. 413, pl ii, figs. 5a, 5b.
Carboniferous: Missouri River below Weston.

Description.—"Shell oval-ovate, rounded before, and gradually narrowing behind the beaks (posterior extremity broken off); beaks prominent, closely incurved, posterior lunule elongated and distinctly defined; surface marked by distinct (rather sharp where unworn) equal concentric ridges, scarcely so wide as the furrows between them. The ridges, when seen in a longitudinal direction, have an imbricated appearance." Hall, 1852.

From *L. meekana*, with which it is associated, this species may be distinguished by its larger size, less strongly elevated umbo, coarser and more widely spaced concentric ridges (2 or 3 in the space of one mm.) which slope gradually upward on the front side to the sharply elevated ridge and descend abruptly on the umbonal side, being there rather sharply excavated. This latter feature is responsible for the imbricated appearance described by Hall, the apparent overlapping, however, being toward the umbo rather than toward the front margin as is usually the case in pelecypod shells.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Mingo County, Locality 119; EAGLE LIMESTONE, Logan County, Locality 74, Mingo County, Locality 85.

Collection.—W. V. G. S.

Leda meekana Mark.

Leda meekana. Mark, 1913, Geol. Survey Ohio. 4th Ser., Bull. 17, p. 307, pl. xv, fig. 1.
Portersville limestone: Blue Rock Township, Muskingum County, and Portersville, Perry County.

Description.—Small, attenuate, finely striate shells, varying in form from attenuate to subelliptical, the former being the more common, distinguished from *L. arata* by their more attenuate form, smaller size, higher umbo, and finer striations. About eight striae were counted in the space of one millimeter.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Lincoln

County, Locality 124, Mingo County, Locality 119; SETH LIMESTONE, Boone County, Locality 114(c); EAGLE LIMESTONE, Buchanan County, Virginia, Locality 118, Fayette County, Locality 63, Raleigh County, Locality 80(c).

Collections.—W. V. G. S. and W. V. U.

Genus PARALLELODON Meek.

Parallelodon sp.

Description.—A cast of the interior of a right valve of a small species of this genus showing none of the ornamentation of the exterior. It resembles *P. obsoletus* in size. Length, 12 mm.; height, 6.5 mm.; thickness of right valve, 2 mm.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Fayette County, Locality 63.

Collection.—W. V. G. S.

Genus AVICULIPINNA Meek.

Aviculipinna americana Meek.

Aviculopinna americana. Meek, 1867, Amer. Jour. Sci., 2nd Ser., vol. xliv, p. 282.
Aviculopinna americana. Meek, 1872, U. S. Geol. Survey of Nebraska, Final Rept. p. 197, pl. 9, figs. 12a-d.
Upper Coal Measures: Nebraska City, Nebraska.

Description.—Fragments of small, compressed, slender, elongated pinniform shells, showing the straight cardinal margin, bordered by a raised ridge, the broad, almost obsolete, radiating ridges below it and the fine, regularly disposed, slightly elevated lines of this species which cross the cardinal ridge at right angles and curve toward the anterior end before reaching the basal margin. The specimens are casts of the interior and exterior of the valves and do not show the outline of the shell, but the direction of the fine, elevated lines strongly indicates this species and there seems little doubt that they represent Meek's species.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114(c).

Collection.—W. V. U.

Genus MYALINA De Koninck.

Myalina perniformis Cox.

Myalina pernaformis. Cox, 1857, Kentucky Geol. Survey, vol. iii, p. 569, pl. viii, fig. 8.
Coal Measures: Providence, Hopkins County, Kentucky.

Description.—Several casts of shells of a *Myalina* have, so far as has been determined, the outline, surface ornamentation and dimensions of this species, and it is with no hesitation that they are referred to it. Fragmentary casts from another locality are very doubtfully included with the first mentioned. These show portions of two valves lying in contact at the hinge and with a smooth, terraced surface.

Occurrence.—Kanawha Group, CANNELTON LIMESTONE, Wyoming County, Locality 73(?); ROOF SHALE OF LITTLE EAGLE COAL, Wyoming County, Locality 76(c).

Collection.—W. V. G. S.

Genus NAIADITES Dawson.

Naiadites elongata Dawson.

Naiadites elongata. Dawson, 1860, Acadian Geology, Supplement, p. 43.
Coal Measures: Nova Scotia.
Naiadites (Anthracomya) elongata. Dawson, 1868, Acadian Geology, 2nd edition, p. 204, text fig. 43.

Description.—"This species is characterized by an obliquely ovate form in typical specimens, the length being about double the breadth. The umbones are somewhat elevated and near the narrower anterior end. The straight hinge line is somewhat oblique and a little more than one-third of the length of the shell. The front margin is slightly sinuated, the posterior margin regularly rounded. The surface is smooth and shining, with concentric lines of growth.

"This species is very variable in form and size. When aged, it is more elongated than when immature, and the hinge line is relatively shorter and less elevated. It often has shells of *Spirorbis* attached, and occurs in patches in beds holding vegetable frag-

ments, in a manner to suggest that it may have been attached to these." Dawson, 1894.[1]

The shell of this pelecypod is very thin and our specimens are in most cases flattened, crushed and badly wrinkled by pressure, so that the original concentric growth lines are almost obliterated. This is true of most specimens found in a matrix of fissile shale. In thick-bedded clay-shales the normal convexity of the shell is exhibited without crushing.

Spirorbis pusillus, ostracoda and plant remains are associated with our shells. *Spirorbis* shells are found attached to those of *Naiadites*, but evidence of attachment of the latter to plant remains has not been found.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Raleigh County, Locality 112(a); SETH LIMESTONE, Boone County, Locality 114(c); Pocahontas Group, ROYAL SHALE, Raleigh County, Locality 108(aa); ROOF SHALE OF POCAHONTAS COAL No. 3, Raleigh County, Locality 125(aa); NORTH FORK SHALE, McDowell County, Locality 126(aa), Mercer County, Locality 71.

Collections.—W. V. G. S. and W. V. U.

Genus SCHIZODUS King.

Schizodus affinis Herrick.

Schizodus affinis. Herrick, 1887. Bull. Sci. Lab. Dennison Univ., vol. ii, p. 41, pl. iv, figs. 22, 22a.
Coal Measures: Flint Ridge, Ohio.

Description.—Casts of the interior of the two valves of the same shell resemble this species.

"Right valve ovate, sub-trigonal, greatest convexity being about one-third from the beak and one-third in length; anterior margin broadly curved, its curve, varying little from an arc of a circle, a little truncated above; lower margin much less curved to the sharp angle at its posterior extremity, which is produced as the termination of a prominence beginning at the umbo as a sharp ridge extending as a low fold to the margin; posterior margin slightly convex, inclined forward entering the upper margin by a

[1] "Review of the Bivalve Mollusca of the Coal Formation of Nova Scotia," Dawson, 1894; Peter Redpath Museum, p. 11, text figs. 6, 7 and 8 on p. 10.

gentle curve. The beak is distant one-third the greatest length from the anterior margin and is but moderately convex. Surface apparently with fine concentric lines and deeper lines of growth." Herrick, 1877.

This description applies closely to our specimen, which is, however, somewhat indistinctly defined along the margins, but the direction of the growth lines serves to indicate the shape of the shell. From the following species, *S. cuneatus* this may be distinguished by its smaller size, more nearly sub-circular outline and by having its beak placed nearer the middle of the hinge line.

Occurrence.—Kanawha Group, Eagle Limestone, Fayette County, Locality 63.

Collection.—W. V. G. S.

Schizodus cuneatus Meek.

Schizodus cuneatus. Meek, 1875, Geol. Surv. Ohio, vol. ii, Pal., p. 336, pl. xx, fig. 7.
Lower Coal Measures: Putnam Hill and Flint Ridge, Ohio.

Description.—"Shell attaining a larger size, ovate-subtrigonal, rather decidedly compressed, the greatest convexity being in the anterior and umbonal regions; anterior side very short, obliquely truncated above, and broadly rounded from near the beaks into the base; basal margin longitudinally semiovate, being most prominent anteriorly, somewhat straightened and ascending obliquely behind to the abruptly rounded or subangular posterior basal extremity; posterior side long, cuneate, somewhat narrowed, obliquely truncated above from the end of the hinge to the posterior basal extremity; hinge line straight behind the beaks, where it is about one-third as long as the valves and a little declining backward; beaks prominent, erect, incurved, and located only about one-fourth the entire length of the valves from the anterior margin; posterior umbonal slopes subangular near the beaks, and continued thence as a rounded prominence obliquely to the posterior basal extremity. Surface smooth, or only showing obscure lines of growth." Meek, 1875.

Our specimens, though fairly numerous, are not entire, being preserved in a sandstone matrix, and have apparently been broken and worn before fossilization. They exhibit their form to a sufficient extent to make their reference to this species fairly cer-

tain. They have only two-thirds the size given by Meek for his specimens, but present very nearly the same dimensions, the basal margin being a little more broadly rounded and the height a little shorter in proportion. These features might well be expected in a less mature shell, if the growth lines are correctly represented on Meek's figure.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114(a).

Collections.—W. V. G. S. and W. V. U.

Genus AVICULIPECTEN Meek and Worthen.

Aviculipecten pellucidus Meek and Worthen.

Aviculopecten pellucidus. Meek and Worthen, 1860, Acad. Nat. Sci. Philadelphia, Proc., p. 455.
Coal Measures: Adams County, Illinois.

Description.—A fragment of a minute pectinoid shell having fine, regular, elevated, radiating striae, closely crowded, separated by flat depressions broader than the striae, and crossed by finer, less sharply elevated, regular concentric striae. Although only a fragment, this shell is undoubtedly *A. pellucidus*. Its minute sculpture with its neat reticulation is scarcely to be confounded with any shells of the same size known to the writer.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68.

Collection.—W. V. G. S.

Genus DELTOPECTEN Etheridge.

Deltopecten occidentalis (Shumard).

Pecten occidentalis. Shumard, 1855, Missouri Geol. Survey, Ann. Repts. i and ii, p. 207, pl. c, fig. 18.
Coal Measures: Near Plattsburg, Clinton County, Missouri.

Description.—This widely distributed species is known at only one locality in the area under consideration. From other pectinoids here described it may be distinguished by its large size, coarse, rounded costae, alternating with smaller ones and separated by spaces as wide as the larger costae, together with its symmetrical form.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114(a).

Collections.—W. V. G. S. and W. V. U.

Deltopecten eaglensis sp. nov.

Plate xxxi, Figs. 1 and 2.

Description.—Shell small, suboval, slightly oblique and inequilateral, height equal to or a little more than the greatest length of the shell below, length of hinge line unknown, probably two-thirds to three-fourths of this dimension, which is measured in a direction such that its prolongation would meet the extension of the hinge line at a point about 30 millimeters in front of the beak; left valve depressed, convexity greatest at the midheight, beak small, pointed, extending slightly beyond the hinge line, separated from the ears by a sinus on each side; the anterior ear wedge-shaped, raised above the narrow, deep sinus, its surface slightly convex, its lateral margin curved inward from the hinge line at an angle of about 65°; posterior ear depressed, its surface flat, not raised above the bottom of the sinus which separates it from the body of the shell, its lateral margin concave, posteriorly acuminate at the hinge line, larger than the anterior ear. Posterior sinus curving slightly inward, one-fifth longer than the anterior sinus, which also curves slightly inward. Ventral margin broadly rounded, very nearly semicircular. Surface of this valve ornamented by sixteen fine, raised, rounded costae, half of which originate within one or two millimeters, and the other half within five millimeters, of the beak; costae separated by broad, flat spaces from two to three times their width, beyond which at the ventral margin they are slightly produced, giving the border a scalloped appearance, but without any evidence of spines at the extremities of the costae; crossing the latter are extremely fine, concentric striae, slightly imbricated, incurved and crescentic on each intercostal space, occasionally more prominent than the average with small protuberances where they cross the costae, in this respect resembling *Acanthopecten carboniferus*, but with no evidence of spines. Two radiating costae appear upon the anterior ear and the fine concentric striae cross the posterior ear parallel to its

outer margin. On this ear the radiating costae are almost obsolete.

This species very nearly resembles in size, configuration, and ornamentation *Aviculipecten arkansanus* Mather, with the following differences, noted after a comparison with Mather's type specimen, kindly loaned by the Walker Museum of the University of Chicago: Our shell is depressed, its beak not full, its convexity about one-half that of *arkansanus*, no concentric striae appearing on Mather's specimen, which is a cast, in a limestone matrix, of the exterior of a left valve. The absence of these striae may be due merely to their not having been preserved on the exfoliated shell. Our shell is slightly broader, proportionately, at the ventral extremity, but the ventral margin of Mather's specimen is not entire and may not exhibit the true outline.

From *Acanthopecten carboniferus* it differs in being much smaller, in having rounded instead of angular costae and in lacking spines at the extremities of the latter.

This species is referred to *Deltopecten* merely because of its similarity to other small species of that genus. It may prove to belong to *Aviculipecten*.

Dimensions of two specimens:

Height, mm.	Length, mm.	Thickness, mm.	Hinge line, mm.
7	8	1	...
9	..	1	5.5

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113; EAGLE LIMESTONE, Fayette County, Locality 63.

Collection.—W. V. G. S.

Deltopecten flabellum sp. nov.

Plate xxxi, Figs. 3-6.

Description.—Small, thin, depressed, obtusely fan-shaped pectinoid shells, inequivalve, varying from equilateral to somewhat inequilateral forms; wings defined by a more or less distinct sinus, hinge line about two-thirds the greatest width of the shell; length and height subequal, the latter slightly the greater in some individuals. Left valve slightly convex, with well defined umbo, ventral and lateral margins broadly rounded, anterior margin ob-

tusely so, posterior margin more narrowly rounded and produced ventrally; ears subtriangular, the anterior one slightly rounded and convex below, defined by a more or less abrupt sinus; faint concentric striae, convex in outline, crossed by faint radiating ribs; posterior ear concave and sinuous in outline, crossed by radiating ribs and fine concentric striae continuous with those on the central portion of the shell, defined by a broad shallow sinus Surface of this valve covered with broad, evenly rounded and expanding striae which increase by interpolation or dichotomy, broader than the grooves which separate them, and all crossed by very fine, wavy, concentric lines which are convex toward the front margin as they cross the grooves. A few indistinct concentric growth lines cross the surface of the valve. Right valve almost flat, umbo obsolete, sub-circular, less contracted under the wings than in the left valve; anterior ear defined by a narrow and deep sinus, coarsely ribbed and crossed by concentric, convex folds, its postero-ventral margin rounded; posterior ear larger, less sharply defined, the sinus separating it from the rest of the valve broad and shallow, lateral margin of this ear sinuous and bordered by fine lines; surface of the right valve marked similarly to the other but with ribs less sharply raised, broader, and with the concentric growth lines more marked in some cases than on the surface of the left valve; fine concentric lines seen only where they cross the ears. This valve is very little if at all inequilateral; both valves somewhat variable in outline.

Our material consists of rather indistinct casts, in many cases crushed, with the margins almost invariably incomplete. Because of the condition of the material, it has been difficult to decipher the specific characters and the generic relations are assigned because of the close relationship of the species to *D. occidentalis*. It is possible that variations may be found in these shells which may necessitate their division into more than one group. A specific name is desirable at this time because the shells are relatively rare, the matrix, so far as the distribution of the former is now known, invariably sandy, and hence good specimens will be difficult to obtain; because of their dissimilarity to described species of equivalent age, and because they are associated with a fairly constant fauna which is meager in number of species.

In its flat, thin shell, which is commonly broken, as well as

in its general form, it resembles closely *Aviculipecten rectilateralis* (Cox), from which it differs in having a sinuous, convex margin under the posterior ear, defined by a shallow sinus, and in lacking the numerous, strong, concentric wrinkles of that form. It perhaps most closely resembles *D. occidentalis* (Shumard), from which it may be distinguished by its somewhat smaller size, and by its more subcircular form, which is less contracted under the ears, and less elongated ventrally.

Derivation of specific name: Latin, *flabellum*, a fan.

Occurrence.—Kanawha Group, CANNELTON LIMESTONE, Locality 73(a); ROOF SHALE OF LITTLE EAGLE COAL, Localities 76(a), 127; GILBERT SHALE, Locality 75, Wyoming County.

Collections.—W. V. G. S. and W. V. U.

Deltopecten sp.

Plate xxxi, Figs. 7 and 8.

Description.—Casts of the interior and exterior of a single right valve of a pectinoid shell seem to belong to no described species. It has not been thought advisable to describe a new species and give it a name, as the characters can not be known with certainty from the single specimen. From right valves of *Deltopecten flabellum* it differs in being more convex, especially in the umbonal region, in having its ears separated from the remainder of the shell by deeper sulcations, in having a longer hinge line, which is equal to the greatest width of the shell, in possessing coarser costae, and raised radiating ribs and concentric corrugations on the anterior ear, giving it a marked reticulated appearance, and in the shell being thicker and stronger than in that species. The posterior ear is distinctly and acutely pointed at the extremity of the hinge. In common with other species of *Deltopecten*, this right valve has a smooth surface, though the radiating costae are distinct. It is referred to *Deltopecten* because of its general resemblance to species of the genus rather than from a clear understanding of the character of its hinge.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Wyoming County, Locality 72.

Collection.—W. V. G. S.

Genus LIMA Bruguiere.

Lima retifera Shumard?

Lima retifera. Shumard, 1858, St. Louis Acad. Sci., Trans., vol. i, p. 214.
Coal Measures: Valley of Verdigris, Kansas.

Description.—Though fragmentary and indistinct, the single specimen of a *Lima* from the area studied, the interior mold of a left valve, shows no features to differentiate it from this species. Both ears and the anterior margin of the shell are broken away, but the size, convexity, subtriangular, oblique shape, and the raised, angular, radiating ridges resemble Shumard's species closely. The ribs are less prominent, smaller and more widely spaced, but as the same number occur in an equal distance on this shell and on good specimens of *retifera*, the difference is attributed to the state of preservation of the mold.

Dimensions of the left valve: Height, 15 mm.; length (anterior margin broken), 14 mm.; thickness, about 2 mm.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Raleigh County, Locality 80.

Collection.—W. V. G. S.

Genus ALLERISMA King.

Allerisma guyandotensis sp. nov.

Plate xxxi, Figs. 9-12.

Description.—Shell small, slightly elevated or moderately gibbous, transversely subquadrate, with a tendency toward a subcuneate form in some of the larger specimens; beak small, obtusely pointed, down-curved, extending slightly over the hinge line, placed two-sevenths to two-eighths the length from the anterior end; umbonal region elevated, regularly arched, highest at a point about one-third the distance from the hinge line to the ventral margin, declining abruptly to the margin just in front of the beak, posteriorly defined by a ridge extending from the beak to a point on the posterior lateral margin about two-thirds the distance from the hinge line to the ventral margin; posterior region adjacent to the hinge line much depressed, in some speci-

mens ornamented by two or more faint radiating lines, of which the one nearest the hinge may be sharply raised and only slightly less prominent than the umbonal ridge; hinge line posterior to the beak nearly straight, slightly convex; posterior lateral margin declining from the hinge, making with it an angle of about 120 degrees, narrowly rounded and heel-like at the extremity of the umbonal ridge; anterior region just in front of the beaks deeply excavated; ventral margin broadly curved, sloping gradually upward and forward, in some specimens a little sinuous at a point two-thirds the distance from the posterior to the anterior end; anterior margin shorter, more narrowly rounded and heel-like than the posterior end, sloping upward and backward to the beak and making with the hinge line posterior to the beak an angle of 130 degrees. Surface ornamented by prominent, raised, rounded, crescentic folds, steepest on the ventral side, somewhat irregular in width, but gradually widening from the beak outward, not separated by flattened spaces between; those nearer the beak not parallel to the margins, but converging toward a point in front of the beaks beyond the boundary of the shell, and crossing the posterior umbonal ridge at right angles, above which they become finer, less prominent and nearly obsolete. Upon the crescentic folds are fine, concentric striae, tending to be somewhat fasciculated, extending across the umbonal ridges to the hinge line. Crescentic folds 18 or 20 in number upon adult shells; concentric striae irregular in number and width, 4 or 5 appearing on some folds, as many as 8 or 10 finer ones on others.

Dimensions of four specimens:

Height, mm.	Length, measured at right angles to height, mm.	Thickness mm.
11	16	2.5 (right valve)
11	19	4 (right valve)
14	23	3 (left valve)
12 (distorted)	30	...

From *A. granosum* Meek this species differs in being smaller, much less convex, and in being more excavated in front of the beak. Our form has no evidences of surface granules, though the coarseness of the matrix makes it seem unlikely that such

would have been preserved if present. From *A. terminale* Hall it differs in being much smaller, less transverse, in having the beaks placed nearer the middle of the dorsal margin and in having a more prominent umbonal ridge.

The specific name is derived from Guyandot Mountain, on the eastern slope of which two of the cotypes were obtained.

Occurrence.—Kanawha Group, DINGESS LIMESTONE, Mingo County, Locality 117; SETH LIMESTONE, Boone County, Locality 114, Raleigh County, Locality 111(a); EAGLE LIMESTONE, Buchanan County, Virginia, Locality 118, Logan County, Locality 74, Mingo County, Localities 85, 87, 121(?), Wyoming County, Localities 80, 129; GILBERT (DOROTHY) SHALE, Raleigh County, Localities 109, 128, 130.

Collections.—W. V. G. S. and W. V. U.

Genus ASTARTELLA Hall.

Astartella concentrica (Conrad).

Nuculites concentrica. Conrad, 1842, Acad. Nat. Sci., Philadelphia, Jour., 1st Ser., vol. viii, p. 248.
Carboniferous System.

Description.—Shells more subquadrate than subtriangular in form, but otherwise as described by Conrad. Represented by casts of the interior and exterior if both valves. Casts of the interior surface are either smooth or with a faint, radial striation. The latter is seen on casts in which the space formerly occupied by the shell has been filled with a microscopic druse of quartz crystals which preserves to some extent the configuration of the unworn inner surface of the shell. These striations, at each concentric growth line and along the inner beveled edge of the ventral and lateral margins of the valves, terminate in a row of small tubercles. The tubercles probably interlock when the valves are closed, since they project slightly above the beveled margin of the shell and since the valves when closed make a tight fit.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Kanawha County, Locality 68, Raleigh County, Locality 113(c); EAGLE LIMESTONE, Fayette County, Locality 63(a), Raleigh County, Locality 80(?).

Collections.—W. V. G. S. and W. V. U.

Pelecypoda indeterminata.

Description.—Two fragments of concentrically corrugated, oval pelecypod shells belong to none of the species described above. The height of the shells was at least 22 mm. and their length in excess of this distance, in one case probably twice as much. They may represent the same or different species.

Occurrence.—Kanawha Group, Roof Shale of Little Eagle Coal, Wyoming County, Locality 76; Eagle Limestone, Logan County, Locality 120.

Collection.—W. V. G. S.

Minute pelecypoda.

Description.—Two small species of pelecypods are poorly represented in our collections. Both are minute, polished, gibbous and marked with concentric corrugations of growth. One is attenuate, the other ovate. The specimens are not entire and their relations have not been determined.

Occurrence.—Kanawha Group, Winifrede Limestone, Raleigh County, Locality 113.

Collection.—W. V. G. S.

SCAPHOPODA.

Genus PLAGIOGLYPTA Pilsbry and Sharp.

Plagioglypta meekana (Geinitz)?

Dentalium Meekianum. Geinitz, 1866, Carb. und Dyas in Nebraska, p. 13, pl. i, fig. 20.
Nebraska City, Nebraska.

Description.—A small portion of a shell resembling this species is so flattened that it has not been possible to distinguish with certainty whether the minute lines are revolving or annular. They appear to be annular. About fifteen of these lines were counted in the space of one millimeter. Geinitz described only twelve on his shell, but as our specimen preserves only five millimeters of the smaller end, we cannot be sure that the number of lines remains constant for equal lengths on all portions of the cone. The

flattened mold of the interior of the shell shows it to have been fractured longitudinally down the middle on opposite sides, at first suggesting the callosity of *Clavulites howardensis*, but there is no doubt that this is an accidental feature and its appearance on opposite sides of the shell would exclude that species. The shell can be referred to this genus and species only provisionally.

Occurrence.—Kanawha Group, GILBERT SHALE, Raleigh County, Locality 128.

Collection.—W. V. G. S.

GASTROPODA

Genus BELLEROPHON Montfort.

Bellerophon crassus var. wewokanus Girty.

Bellerophon crassus var. *wewokanus*. Girty, 1911, New York Acad. Sci., Ann., vol. xxi, p. 138.
Wewoka formation: Wewoka quadrangle, Coalgate quadrangle, Oklahoma.

Bellerophon crassus var. *wewokanus*. Girty, 1915, U. S. Geol. Survey, Bull. 544, p. 164, pl. xix, figs. 1-3b.
Wewoka formation: Wewoka quadrangle, Coalgate quadrangle, Oklahoma.

Description.—A very imperfect specimen is referred to this species and variety. It has, however, the imperforate umbilicus, globular form, revolving keel, and transverse lines described by Girty.

Occurrence.—Kanawha Group, SETH LIMESTONE, Boone County, Locality 114.

Collection.—W. V. G. S.

Genus PHANEROTREMA Fischer de Waldheim

Phanerotrema grayvillense (Norwood and Pratten)?

Pleurotomaria grayvillensis. Norwood and Pratten, 1855, Acad. Nat. Sci., Philadelphia, 2nd ser., vol. iii, p. 75, pl. ix, figs. 7a-b.
Coal Measures: Grayville, Illinois; near mouth of Rush Creek, Posey County, Indiana; Shawneetown and Galatia, Illinois.

Description.—We have in hand specimens exhibiting the interior of a small, broad, low-spired coil, with rounded volutions, depressed suture, below which on the upper portion of the volu-

tion is a carina with a row of small tubercles. Other surface features are not clearly shown. Suggestions of revolving lines upon the body volutions are apparent. This very nearly resembles *P. grayvillense*, but as the exterior is unknown, the identification remains doubtful.

Occurrence.—Kanawha Group, EAGLE LIMESTONE, Fayette County, Locality 63.

Collection.—W. V. G. S.

Genus SCHIZOSTOMA Bronn.

Schizostoma catilloides (Conrad).

Inachus catilloides. Conrad, 1842, Acad. Nat. Sci., Philadelphia, Jour., 1st ser., vol. viii, p. 273.
Coal Measures.

Description.—This well known species is represented only by casts, but the shell may be readily reconstructed from the remains The greatest diameter of the coils is 14 mm.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113; EAGLE LIMESTONE, Fayette County, Locality 63(a).

Collections.—W. V. G. S. and W. V. U.

Genus ACLISINA De Koninck.

Aclisina stevensiana (Meek and Worthen).

Turritella? Stevensana. Meek and Worthen, 1866, Geol. Survey, Illinois, vol. ii, p. 382, pl. xxvii, figs. 8, 8a.
Upper Coal Measures: North branch Saline Creek, Gallatin County, Illinois.

Description.—This small, elongate, gradually tapering shell is slightly larger than the following species [*A. conditi* ?], the volutions being more rounded, larger and ornamented by finer and more numerous revolving lines. These shells are casts and do not exhibit the surface features distinctly.

Occurrence.—Kanawha Group, GILBERT SHALE, Wyoming County, Locality 81.

Collection.—W. V. G. S.

Aclisina conditi Mark?

Aclisina conditi. Mark, 1913, Geol. Surv. Ohio, 4th ser., Bull, 17, p. 314, pl. xvi, figs. 8, 9 (Date of imprint, 1912).
Portersville Limestone: Portersville, Ohio.

Description.—"Shell very small, rather robust, tapering to a pointed apex; volutions six to six and one-half, convex, increasing rather rapidly in size, the last one forming about one-third of the entire length, all distinctly flattened just below the suture, the flattened space sloping outward. Surface ornamented by prominent, fine, revolving lines, of which five or six may be counted on the body whorl and four or five on each of the upper volutions. The upper one of these revolving lines marks the lower limit of the flattened space just below the suture, after giving the whorls a subangular appearance. Lines of growth very obscure and not readily seen even on well preserved specimens. Length, 3 to 4 mm.; width, 1.5 to 2 mm." Mark, 1913.

A few casts, with their surfaces badly broken, apparently belong to this species. Only four revolving lines are preserved on the body whorl, but it seems probable that there were two others on the base which are not preserved.

Occurrence.—Kanawha Group, Gilbert Shale, Wyoming County, Locality 81.

Collection.—W. V. G. S.

Aclisina sp.

Description.—The cast of a small shell in form intermediate between the two species of this genus described above is specifically distinct from either, yet not well enough preserved to make it desirable to give it a name. It can be compared to *A. swallowiana*, which has about the same shape, but only half the number of volutions in a height equivalent to that of our form. The volutions are consequently shorter in proportion to the diameter of the coil than in that species. Like *A. stevensiana*, the volutions are rounded, finely striate, the striae (four or five in number) apparently absent on the upper portion of each volution below the suture. The last volution is broken away and the whole cast has been slightly flattened. Volutions 8; height, 6 mm.; width at lower end, 3 mm. Apical angle, 17°.

Occurrence.—Kanawha Group, GILBERT SHALE, Wyoming County, Locality 81.

Collection.—W. V. G. S.

Gastropoda indeterminata.

Description.—Obscure, flattened, rather smooth and irregularly circular, lens-shaped bodies are found in certain shales. The central portion of these lenses is depressed and shows irregular, spirally radiating lines which suggest their having been formed by a tortional motion or by flattening of matter spirally arranged. Some are composed of closely fitting layers which show evidences of a spiral coiling. The surface is smooth, polished, irregularly fluted and lined, as in clay which has been slickensided by differential movement. Portions of a paper-thin layer of material resembling a thin molluscan shell are found enveloped in the spiral layers in some specimens and apparently covered the whole, but, being very delicate, have been destroyed in removing the fossils from the matrix.

The interpretation of these remains was for some time puzzling, but several were found in the Conemaugh of Lewis County which satisfactorily solve the problem. These specimens include several small thin-shelled species of coiled gastropods of bellerophontoid and pleurotomariod genera. They have been crushed, but enough of the shell remains intact for its determination. Crushing evidently took place after the shell had been filled with a fine grained clay, but before this filling had hardened sufficiently to have become brittle or to retain the impression of the interior of the shell. The process did not, however, destroy the coiled structure of the shell filling nor completely crush the shell, though the latter has usually been fractured and somewhat flattened. In some instances this plastic filling seems to have oozed out from fractures in the shell or from the aperture, but this is not clear. Similar bodies have been observed by the writer in various clays of other areas which, so far as known, contain no other animal remains, but at the time their significance was not appreciated.

Occurrence.—New River Group, DOUGLAS SHALE, Locality 83; Pocahontas Group, NORTH FORK SHALE, Locality 126(c); McDowell County.

Collections.—W. V. G. S. and W. V. U.

CEPHALOPODA.

Nautilloidea indeterminata.

Description.—A fragment of an internal cast of a coiled nautilloid shell shows so little of its form that no determination of either genus or species is possible. The coil was broad, 23 mm. breadth of surface being preserved. The inner angulation is obtuse and provided with a row of large nodes. The orifice was probably trapezoidal in outline. Thickness of the coil is at least 15 mm.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Raleigh County, Locality 113.

Collection.—W. V. G. S.

ARTHROPODA.

BRANCHIATA.

Branchiata? indeterminata.

Description.—A few fragments of broad, thin plates, with obscure concentric markings, suggest crustacean or arachnidan tests. Their relationships are uncertain. Diameter of largest fragment, 25 mm.

Occurrence.—Kanawha Group, SETH LIMESTONE, Raleigh County, Locality 111; CANNELTON LIMESTONE, Wyoming County, Locality 73.

Collection.—W. V. G. S.

CRUSTACEA.

Ostracoda indeterminata.

Description.—Casts of minute shells. Specific relationships not determined.

Occurrence.—Kanawha Group, WINIFREDE LIMESTONE, Ra-

leigh County, Locality 113(aa); Pocahontas Group, NORTH FORK SHALE, McDowell County, Locality 126(aa).

Collection.—W. V. G. S.

VERTEBRATA.

PISCES.

Pisces indeterminata.

Plate xxxi, Figs. 13 and 14.

Description.—Minute, isolated scales occur sparingly in shales at two localities. Polished, ridged scales, rhomboidal in outline; flat; length not exceeding 4 millimeters.

Occurrence.—Kanawha Group, GILBERT SHALE, Wyoming County, Locality 81(c).

Collections.—W. V. G. S. and W. V. U.


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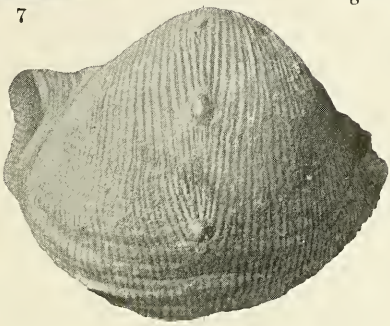
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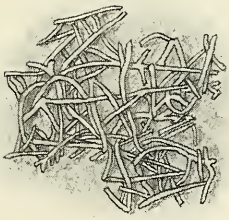
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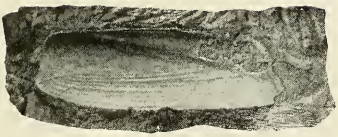
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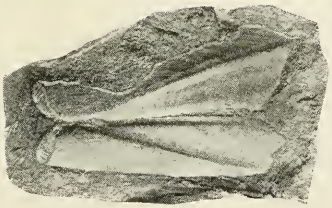
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R. Weber and W. A. Price, dels.

Fossils from the Pottsville Series.

DESCRIPTION OF PLATES.

PLATE XXX.

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Fig. 1. *Clionolithes canna* sp. nov.....x 5⅔ 688
A portion, 6 x 7 mm. in size, of a mat measuring 7 x 15 mm. in an unidentified invertebrate shell. Conemaugh Series Brush Creek Limestone, Preston County, Locality 33. COTYPE.

Fig. 2. *Lingula kanawhensis* Price.....x 1 691
Mold of interior of a shell of average size and shape. Cannelton Limestone, Locality 79.

Fig. 3. *Lingula lemniscata* sp. nov.....x 3 691
Mold of interior of shell.
Eagle Limestone, Locality 80. COTYPE.

Figs. 4-6. *Schizophoria altirostris* (Mather)..... 694
4. Mold of interior of pedicle valve.....x 1
5. Mold of exterior of same specimen, crushed and with margins broken.....x 1
6. Mold of interior of brachial valve showing muscular area and vascular bands.....x 1
Eagle Limestone, Eagle, Fayette County, Locality 63.

Figs. 7 and 8. *Schizophoria resupinoides* Cox ?..... 696
7. Mold of interior of a pedicle valve, somewhat flattened and crushed.....x 1
8. Mold of interior of a brachial valve, showing muscular area and vascular bands. The fine striations covering a small portion of the center of the front margin may belong to another shell.....x 1
Eagle Limestone, Eagle, Fayette County, Locality 63.

Figs. 9-11. *Productus nodosus* Newberry..... 699
9. Pedicle valve, cardinal view, one ear broken away..x 1
10. Ventral view of same, showing median row of nodes. The nodes are slightly exaggerated in prominence.x 2
11. Brachial valve; mold of exterior; cardinal extremity and margin broken on one side.....x 1
Seth Limestone, Locality 114.

Figs. 12 and 13. *Sanguinolites raleighensis* sp. nov..... 707
12. Mold of exterior of left valve.....x 2
13. Same .....x 1
Gilbert Shale, Locality 128. HOLOTYPE.

Figs. 14-16. *Prothyris carinata* sp. nov..... 708
14. Right valve, mold of interior.....x 1
Eagle Limestone, Locality 84. COTYPE.
15. Mold of exterior of shell, showing both valves, margins broken .....x 2⅓
16. Restoration of left valve of same.....x 1
Gilbert Shale, Locality 128. COTYPE.

PLATE XXXI.

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Figs. 1 and 2. *Deltopecten eaglensis* sp. nov..... 719

1. Mold of interior of left valve, ventral extremity and posterior ear having the margins broken.....x 2
2. Mold of interior of left valve, anterior ear lacking..x 2

Eagle Limestone, Eagle, Fayette County, Locality 63. COTYPES.

Figs. 3-6. *Deltopecten flabellum* sp. nov..... 720

3. Mold of interior of left valve.....x 2

Roof shale of Little Eagle Coal, Locality 76. COTYPE.

4. Mold of interior of right valve, margins broken.....x 2
5. Same aspect of another specimen.....x 2

Cannelton Limestone, Locality 73. COTYPES.

6. Mold of interior of a right valve, dorsal margin incomplete. (Surface dotted with pits of *Spirorbis pusillus* scarcely visible in the illustration).....x 1 689

Roof shale of Little Eagle Coal, Locality 76. COTYPE.

Figs. 7 and 8. *Deltopecten* sp..... 722

7. Mold of exterior of right valve.....x 1
8. Mold of interior of same shell.....x 1

Eagle Limestone, Locality 72.

Figs. 9-12. *Allerisma guyandotensis* sp. nov..... 723

9. Right valve, ventral border distorted.....x 3
10. Left valve of another specimen.....x 1
11. Same, profile view of anterior end.....x 1

Gilbert Shale, Locality 128. COTYPES.

12. Left valve, flattened, margins not entire.....x 1

Eagle Limestone, Locality 74. PARATYPE.

Figs. 13 and 14. *Pisces indeterminata*..... 732

13. Minute scale, affinities unknown.....x 6⅔
14. Another specimen.....x 6⅔

Gilbert Shale, Locality 81.


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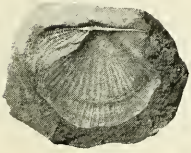
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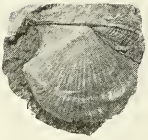
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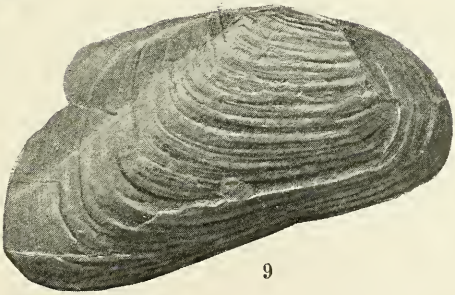
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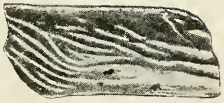
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R. Weber, del.

Fossils from the Pottsville Series.

INDEX TO SPECIES.

(Names in *italic* are synonyms; figures in **black face type** are numbers of pages on which detailed descriptions appear; figures in *italic* denote illustrations on plates.)

APPENDIX.

LEVELS ABOVE MEAN TIDE IN RALEIGH, MERCER AND SUMMERS COUNTIES.

The following lists of levels are taken from Bulletin 2 of the West Virginia Geological Survey:

Main Line Chesapeake & Ohio Railroad.

Miles from Fort Monroe	STATIONS	State	County	Elevation
322.8	Ronceverte	W.Va.	Greenbrier	1670
326.5	Rockland	.....	.....	1663
329.0	Fort Spring	.....	.....	1636
330.3	Snow Flake	.....	.....	.....
330.8	Frazier	.....	.....	.....
332.6	Halfway	.....	.....	.....
335.8	Alderson	.....	Monroe	1556
337.7	Mohler	.....	.....	.....
339.4	Wolf Creek	.....	.....	.....
341.5	Riffe	.....	.....	.....
343.3	Pence Springs	.....	.....	1540
345.3	Lowell	.....	Summers	.....
347.2	Talcott	.....	.....	.....
347.8	Big Bend	.....	.....	1530
349.5	Hilldale	.....	.....	.....
352.6	Wiggins	.....	.....	1410
357.0	Hinton	.....	.....	1378
360.0	Barksdale	.....	.....	.....
362.0	Brooks	.....	.....	1345
366.1	Sandstone	.....	.....	1299
369.6	Meadow Creek	.....	.....	1276
374.3	Glade	.....	Fayette	1245
378.7	Quinnimont	.....	.....	1205
379.9	Prince	.....	.....	1203
380.8	XN Cabin	.....	.....	1203
383.1	McKendree	.....	.....	1135
385.0	Thayer	.....	.....	1116

Distances from Ft. Monroe	STATIONS	State	County	Elevation
387.0	Alaska	W. Va.	Fayette	.....
387.8	Claremont	.....	.....	.....
389.1	Stone Cliff	.....	.....	1077
391.8	Thurmond	.....	.....	1070
392.2	Dimmock	.....	.....	.....
392.4	Rush Run	.....	.....	.....
393.2	Beury	.....	.....	.....
394.0	Central	.....	.....	.....
394.5	Fire Creek	.....	.....	1038
395.2	Pennbrook	.....	.....	.....
396.4	East Sewell	.....	.....	1012
397.6	Sewell	.....	.....	.....
399.3	Caperton	.....	.....	.....
400.4	Keeney's Creek	.....	.....	.....
401.6	Nuttall	.....	.....	954
404.3	Fayette	.....	.....	909
404.9	Newlyn	.....	.....	.....
405.5	Michigan	.....	.....	.....
405.6	Elmo	.....	.....	.....
406.8	Sunnyside	.....	.....	.....
407.6	Gaymont	.....	.....	.....
408.6	Hawk's Nest	.....	.....	837

Piney Creek Branch.

Miles from Prince	STATIONS	State	County	Elevation
0.0	Prince	W.Va.	Fayette	1198
1.4	Terry Junction	.....	Raleigh	.....
3.4	Wright	.....	.....	.....
5.2	Stonewall	.....	.....	.....
5.6	Lanark	.....	.....	.....
6.0	Stanaford	.....	.....	.....
6.4	Dorsey	.....	.....	.....
7.4	Knob Branch	.....	.....	.....
10.2	Rodes	.....	.....	1912
11.2	Whorley	.....	.....	.....
13.6	Raleigh	.....	.....	2130
14.1	West Raleigh	.....	.....	.....
15.1	Beckley Junction	.....	.....	2278
16.4	Mabscott	.....	.....	.....
16.8	Bickell	.....	.....	.....
18.4	Cabell	.....	.....	.....
19.0	Burke	.....	.....	.....
21.0	Eccles	.....	.....	.....
23.6	Baylor	.....	.....	.....
25.4	Surveyor	.....	.....	1930
27.6	Lester	.....	.....	.....

The Virginian Railway.

Miles from Sewell's Point	STATIONS	State	County	Elevation
337.1	Kellysville	W.Va.	Mercer	1673.3
340.6	Stengel			1905.3
344.1	Ingleside			2183.8
350.7	Princeton			2395.0
351.5	Gardner Junction			2387.2
354.6	Kegley			2335.3
358.2	King			2261.6
361.1	Rock			2231.0
366.1	Matoaka			2389.2
367.2	Giatto			2405.8
370.9	Clarks Gap		Mer.& Wyo.	2523.5
373.9	Micajah		Wyoming	2273.6
377.9	Herndon			1890.7
382.3	Taft			1495.7
385.7	Elmore			1399.3
387.3	Mullens			1425.9
392.4	Maben		Raleigh	1591.8
396.1	Hotchkiss			1700.7
398.7	Slab Fork			1905.5
400.8	Jenny Gap			2084.4
402.5	Lester			2028.1
405.4	Surveyor			1930.2
407.1	Glen White Junction			1965.8
409.3	Eccles			2076.6
411.1	Harper			2138.8
417.2	Cirtsville	W.Va.	Fayette	1703.7
419.0	Herberton			1638.1
422.5	Lively			1615.0
425.3	Dothan			1783.1
427.7	Silver Gap			1880.2
428.7	Bishop			1831.5
434.2	Hamilton			1883.7
437.5	Page			1109.7
441.4	Robson			900.0
446.0	Deepwater			652.2

Winding Gulf Branch.

Miles from Mullens	STATIONS	State	County	Elevation
0.0	Mullens	W.Va.	Wyoming	1425.8
6.5	Horsepen			1551.2
13.0	Tams		Raleigh	1738.6
14.9	Stotesbury			1866.6
15.5	MacAlpin			1913.5
16.0	Woodbay			1929.1
17.4	Patterson			2040.0
21.1	Sophia			2321.7
22.7	Affinity			2285.9
23.7	Pemberton			2265.9

Collins Spur.

Miles from Mullens	STATIONS	State	County	Elevation
19.5	Goodwin	W.Va.	Raleigh	2223.8
20.3	Winding Gulf			2287.7

Shockley Branch.

Miles from Glen White Junction	STATIONS	State	County	Elevation
0.0	Glen White Junction	W.Va.	Raleigh	1965.7
1.6	Glen White			2136.0

Norfolk & Western Railway.

Distances from Norfolk	STATIONS	State	County	Elevation
342.41	Wills	W.Va.	Mercer	1614
346.96	Oakvale			1703
351.08	Hardy			1863
352.73	Ingleside			1842
353.89	East River			1995
356.95	Tulip			2136
358.73	Ada			2213
363.08	Bluefield			2556
372.26	Abbs Valley			2291
372.92	Dayton			2287
373.84	Bluestone Junction			2281
374.94	Wood			2272
375.29	Cooper			2266
376.68	Ruth			2388
376.80	East End Tunnel			2384
377.42	Coaldale			2336

Bluestone Branch—N. and W. Railway.

Distances from Bluestone Junction	STATIONS	State	County	Elevation
0.00	Bluestone Junction	W.Va.	Mercer	2281
1.50	Pocahontas			2315

Cooper and Goodwill Branch—N. and W. Railway.

Distances from Cooper	STATIONS	State	County	Elevation
0.00	Cooper	W.Va.	Mercer	2266
1.14	Bramwell			2247
1.80	Simmons Creek Junction			2242
5.48	Johnson's			2216
5.93	Flipping Creek Junction			2210
6.35	Duhring			2215
7.91	Goodwill			2262

Crane Creek Branch.

Distances from Norfolk	M. P.	Stations	State	County	Elevation
381.22	0.0	Flipping Creek Junction....	W.Va.	Mercer	2217
	2.0	Montcalm Junction Widemouth Branch.....	.....	.....	2210
	5.3	Mora	.....	.....	2335

Widemouth Branch.

Distances from Norfolk	M. P.	Stations	State	County	Elevation
382.32	0.0	Junction, with Crane Creek Branch, Montcalm.....	W.Va.	Mercer	2210
	2.76	Rock	.....	.....	2198
	8.35	Giatto	.....	.....	2374
	12.33	Clarks Gap.....	.....	.....	2520

ELEVATIONS ABOVE TIDE IN RALEIGH, MERCER AND SUMMERS COUNTIES, DETERMINED BY THE UNITED STATES GEOLOGICAL SURVEY.

BALD KNOB QUADRANGLE.

Mouth of Whiteoak Creek up Coal River to Hazy Creek.

Feet.

Orange, 0.5 mile north of post-office, south side of Whiteoak Creek, 300 feet west of mouth of Little Whiteoak Creek, 0.2 mile east of mouth of Whiteoak Creek, in rock cliff; aluminum tablet stamped "734"..... 732.963

Mouth of Whiteoak Creek, 1.6 miles south of, 300 feet east of sharp bend on road to east, 2 feet south of road; cross on ledge of rock..... 748.79

Mouth of Whiteoak Creek, 2.8 miles south of, 3 feet west of river; nail in root of sycamore tree..... 751.27

Mouth of Whiteoak Creek, 6.3 miles south of, 6 feet east of road, 100 feet south of ford of river, about 0.25 mile south of Seng Creek; cross on rock..... 788.95

Mouth of Whiteoak Creek, 7.3 miles south of, northwest corner of concrete culvert of Chesapeake & Ohio Railway over Bear Hollow, in top face; bronze tablet stamped "817".... 815.983

Feet.

Jarrolds Valley, 1 mile south of, on northeast corner of concrete abutment of bridge over Little Marsh Fork, in lower face; aluminum tablet stamped "855"..... 855.404

Jarrolds Valley, 3.2 miles south of, 6 feet west of railroad grade, 150 feet north of culvert, in sharp curve to right; cross on rock..... 900.06

Jarrolds Valley, 3.8 miles south of, on east top face of culvert over branch, in concrete; aluminum tablet stamped "918". 916.834

Jarrolds Valley, 5.5 miles south of, about 0.5 mile above Hecla post-office, 6 feet east of road and between same and Marsh Fork; spike in root of beech tree..... 942.27

Jarrolds Valley, 6.1 miles south of, 200 feet west of road, about 10 feet west of Marsh Fork, about 0.25 mile north of Hazy Creek, in ledge of rock, near old sycamore snag; bronze tablet stamped "956'..... 954.950

Near Launa.

Launa, 1.8 miles southeast of, 250 feet west of road to north, 150 feet west of creek crossing, south side road; chiseled cross on flat rock, marked "1016".....1,015.27

Launa, 400 feet east of post-office, south side of road; chiseled cross on flat rock, marked "1017".....1,017.22

Near Dorothy West of Jarrolds Valley.

Dorothy, 2.7 miles west of, 320 feet east of mile post "C 5," about 500 feet east of east end of curve to north, 15 feet south of track; chiseled cross on rock, marked "879".... 878.55

Leevale, 0.2 mile west of station, 800 feet west of mile post "C 6" 50 feet west of head block of switch, in curve to left, 10 feet south of track, on boulder; chiseled cross marked "848"..... 847.51

Jarrolds Valley, about 400 feet northeast of station, 10 feet north of railroad track, at end of switch, in line post between Raleigh and Boone Counties, spike, marked "839" (Previous adjusted elevation of this bench mark has been disturbed by railroad wreck)..... 837.89

BECKLEY QUADRANGLE.

Packs Branch East Along Highway and Chesapeake & Ohio Railway to Thurmond.

Packs Branch, 0.3 mile east of, on sharp curve to south, on south abutment of culvert over small stream; chiseled cross, marked "1708".....1,702.07

Feet.

Packs Branch, 1 mile east of, 0.3 mile west of Upper Packs Branch School, 150 feet south of road, 40 feet south of Packs Branch, 80 feet north of railroad, in large sandstone rock; bronze tablet stamped "1768".....1,767.053

Mt. Hope, 2.2 miles west of, 60 feet west of end of tunnel, 7 feet south of track; chiseled cross on ledge of rock, marked "1865".....1,864.41

Mt. Hope, 0.9 mile west of, 250 feet west of head block of switch, on curve to south, 50 feet south of road, 15 feet north of track; chiseled cross on rock, marked "1727"...1,726.01

Mt. Hope, 0.1 mile north of, 100 feet south of K. G. J. & E. R. R. track, 30 feet east of road junction, 10 feet south of Sugar Creek Mining Company's store, in sandsone ledge; bronze tablet stamped "1708".....1,707.656

Mt. Hope, Bradley's drug store, in side walk in front of; brass plate stamped "1738".....1,738.094

Mt. Hope, 1.2 miles north of, 0.3 mile south of Dunloup, on sharp curve to east, 30 feet south of head block of spur track and mile post "T 9," in cut, 10 feet west of Chesapeake & Ohio Ry. track; chiseled cross on rock, marked "1688" 1,687.12

Mt. Hope, 2.4 miles north of, 0.3 mile south of Sun, 800 feet north of mile post "T 8," on curve to west, 10 feet west of railway; chiseled cross on rock, marked "1652".....1,651.09

Glen Jean, 0.1 mile east of station, on south abutment of bridge of Chesapeake & Ohio Ry., east end; bronze tablet stamped "1605".....1,603.665

Harvey, 125 feet northwest of railroad telegraph office, 150 feet west of road crossing, on curve to north, in bluff north of railroad tracks; chiseled cross on rock, marked "1571" 1,569.69

Harvey, 1 mile east of, on sharp curve to south, 7 feet north of track; 0.1 mile east of mile post "T4"; chiseled cross on rock, marked "1486".....1,485.39

Harvey, 1.7 miles east of, 0.2 mile east of mouth of Hamilton Branch, 75 feet north of track, on north bank of Dunloup Creek, in sandstone ledge; bronze tablet stamped "1404"..1,402 735

Harvey, 3.2 miles east of, 0.7 mile east of Meadow Fork, 800 feet east of mile post "T 2," 25 feet south of track, in curve to south; chiseled cross on rock, marked "1249"....1,247.82

Thomas, 0.25 mile east of, 700 feet east of mile post "T 1," 10 feet south of track, on sharp curve to north; chiseled cross on rock, marked "1113".....1,111.94

Thurmond, in north end of east abutment of bridge over New River; aluminum tablet stamped "1068".....1,067.457

From Point 6 Miles East of Surveyor Along Chesapeake & Ohio Railway to Raleigh (Leveled Twice).

Feet.

Eccles, 3 miles east of, 450 feet west of sign board, at Cabell, in south face of east abutment of railroad bridge "185" over Big Whitestick Creek; bronze tablet stamped "2345". 2,343.208

Westwood, 450 feet west of road crossing, 150 feet west of head block of switch, 20 feet south of track; chiseled cross on rock, marked "2332" 2,329.75

Mabscott, 800 feet east of station, 800 feet east of Beckley Junction, in north end of west abutment of bridge "162"; chiseled cross, marked "2277" 2,275.49

Mabscott, 1 mile east of, in south end of west abutment of bridge "154" over Whitestick Creek; bronze tablet stamped "2266" 2,264.792

West Raleigh Station and post-office, 0.7 mile west of, in front of coal mine, in south end of west abutment of bridge "148"; chiseled cross, marked "2205" 2,204.26

West Raleigh, post-office and C. & C. Co. store, rail top 2,122.00

Raleigh, in front of station; top of rail 2,123.2

Raleigh, 0.3 mile east of station, at Glen Morgan, on west end of south abutment of bridge "132" over Beaver Creek; chiseled cross, marked "2103" 2,101 72

Quinnimont West Along Chesapeake & Ohio Railway to Raleigh (Leveled Twice).

Quinnimont, 46 feet south of station, in top of north abutment at west side of railroad bridge; aluminum tablet stamped "1200" 1,199.058

Prince, in front of station; top of rail (1912) 1,192.1

Stanaford, 5 miles northeast of, 0.9 mile east of Terry Junction, on north end of east abutment of bridge "10"; chiseled cross, marked "1190" 1,188.35

McCreery, in front of station; top of rail 1,197.8

Stanaford, 4 miles northeast of, about 300 feet north of mouth of Batoff Creek, 125 feet south of mile post "P 2" in curve to east, on rock east of track; chiseled cross, marked "1206" 1,204.56

Stanaford, 3.1 miles northeast of, at Pack (Wright P. O.), 150 feet south of sign board, on west side of track; chiseled cross on rock, marked "1254" 1,259.13

Stanaford, 1.9 miles northeast of, 0.4 mile west of mouth of Fat Creek, in curve to south, 75 feet south of track, on south bank of Piney Creek, 500 feet west of mile post "P 4", in large sandstone rock; bronze tablet stamped "1366" 1,364.603

Feet.

Stanaford, 0.8 mile northeast of, at Stonewall, cross on east end of north abutment of bridge "52".....1,452.91

Stanaford, 400 feet south of post-office, 30 feet east of track, on bank of Piney Creek; chiseled cross on rock, marked "1524".....1,523.18

Raleigh, 6.5 miles northeast of, at north end of curve to left, 400 feet south of mile post "P 7," on west side of track; chiseled cross on rock, marked "1611".....1,609.67

Raleigh, 5.6 miles northeast of, at Whitestick, on west end of north abutment of bridge over Cranberry Creek; bronze tablet stamped "1700".....1,698.739

Raleigh, 4.6 miles northeast of, at north end of curve to west, 200 feet north of mile post "P 9," 6 feet west of track; chiseled cross on rock, marked "1821".....1,819.51

Raleigh, 3.7 miles northeast of, 700 feet north of sign board at Rodes, 300 feet south of signal house, 20 feet west of main track: chiseled cross on rock, marked "1889"....1,888.25

Raleigh, 2.3 miles northeast of, at Whorley, in south end of west abutment of bridge "112" over Piney Creek; bronze tablet stamped "1984".....1,982.369

Raleigh, 1.3 miles northeast of, on curve to east, on west end of north abutment of bridge "122" over small stream; chiseled cross, marked "2044".....2,042.78

Near Crow. (Part of a circuit from Raleigh lying mostly in Flattop Quadrangle and based upon line from Quinnimont.)

Crow, 0.5 mile west of, 10 feet west of junction of track up Little Beaver Creek and grade extending past Crow, 5 feet south of track; chiseled cross on rock, marked "2400"....2,399.81

Crow, 0.6 mile south of, about 300 feet east of Little Beaver Creek, 100 feet north of railroad crossing, 5 feet east of road, on sandstone rock; bronze tablet stamped "2414"..2,413.502

Near Sewell[1]

Sewell, 1 mile east of, south edge of track; chisel point on boulder, chiseled "1437 U. S.".....1,436.47

Sewell, on bluff above, at road crossing of Sewell Valley Lumber Company's railroad and Springdale wagon road; chisel point on boulder; chiseled "1240 U. S.".....1,239.95

Sewell, 0.6 mile south of, 170 feet south of mile post "Cin. 268," in foundation of semaphore pole; aluminum tablet stamped "1011" (Description as published in Bulletin 399, page 11, is in error).....1,010.113

FLATTOP QUADRANGLE.

Raleigh East Along Highway to Crow, thence South to Ghent, thence West and North to Raleigh. (An extensive error was disturbed along this line.)

Feet.

Glen Morgan, 1.1 miles east of, 100 feet east of crossing of railroad tracks, south of lumber mill, 15 feet south of road crossing; chiseled cross on rock, marked "2148".....2,147.15

Beaver, 0.7 mile east of, 150 feet south of bridge over Little Beaver Creek, 10 feet north of track, 10 feet east of road crossing; cross on rock, marked "2231".....2,229.75

Beaver, 2.4 miles east of, 700 feet east of twin trestle, at mouth of large hollow entering from south, 30 feet south of Little Beaver Creek, on curve to south, 10 feet north of narrow gauge track; chiseled cross on rock, marked "2340".....2,339.36

(See Beckley Quadrangle for portion of this line here omitted.)

Crow, 2.1 miles south of, 300 feet north of small stream entering from east, 100 feet east of Little Beaver Creek, 3 feet east of lumber track, in curve to left; chiseled cross on rock, marked "2456".....2,454.96

Crow, 3.3 miles south of, 200 feet south of trail entering at bridge, 50 feet east of Little Beaver Creek, 3 feet east of lumber track; chiseled cross on rock, marked "2503"....2,502.84

Crow, 4.3 miles south of, 0.4 mile south of large hollow entering from west, 0.1 mile north of sharp hollow entering from east, 200 feet east of Little Beaver Creek, on south side of clump of rock; chiseled cross on rock, marked "2650".....2,649.18

Shady Spring, 1 mile east of, 200 feet west of Little Beaver Creek, on south side of road, in sandstone rock; bronze tablet stamped "2710".....2,709.141

Shady Spring, 150 feet north of post-office, 20 feet west of road, north of road junction; chiseled cross on rock, marked "2694".....2,693.58

Shady Spring, 1.5 miles south of, 100 feet north of road leading to west, 8 feet west of road; chiseled cross on rock, marked "2772".....2,771.26

Shady Spring, 2.6 miles south of, 250 feet south of small drain, 10 feet west of road; chiseled cross on rock, marked "2842".....2,841.92

Shady Spring, 4.3 miles south of, 30 feet north of small drain, on curve of road to east, 10 feet west of road, in sandstone boulder; bronze tablet, stamped "2922".....2,922.142

Feet.

Shady Spring, 5.1 miles south of, 150 feet north of small stream, 10 feet east of road; chiseled cross on boulder, marked "2874"..... 2,875.14

Shady Spring, 6.3 miles south of, 500 feet north of road leading to north, 5 feet west of road; chiseled cross on rock, marked "2913"..... 2,912.78

Ghent, 250 feet north of, 5 feet east of road; chiseled cross on rock, marked "2089"..... 2,988.22

Ghent, 1 mile west of, 70 feet west of road junction, 5 feet north of road; chiseled cross on rock, marked "3005"..... 3,004.42

Ghent, 1.8 miles west of, 0.25 mile west of divide between Laurel Creek and Glade Creek, 10 feet south of road, 100 feet west of small stream, in sandstone rock; bronze tablet stamped "2960"..... 2,960.219

Ghent, 2.8 miles west of, 100 feet north of bridge over Piney Creek, in road fork, 10 feet west of road; chiseled cross on rock, marked "2728"..... 2,728.11

Ghent, 4 miles west of, 800 feet east of hollow (large) draining to south, 100 feet east of small hollow, 6 feet south of road; chiseled cross on ledge of rock, marked "2693".... 2,792.80

Odd, 0.2 mile north of, at road fork, in rock; bronze tablet, stamped "2708"..... 2,707.802

Odd, 1.4 miles north of, at head of Sugarcane Branch, on small rise between two hollows, 4 feet east of road; chiseled cross on rock, marked "2774"..... 2,774.31

Odd, 2.7 miles north of, 100 feet south of bend to west, on east side of road; chiseled cross on rock, marked "2550"..... 2,549.41

Odd, 3.7 miles north of, 500 feet north of house, 30 feet west of Piney Creek, 25 feet west of private road, in rock; bronze tablet stamped "2309"..... 2,308.786

Odd, 5.3 miles north of, on east side of road, in curve to east; chiseled cross on rock, marked "2304"..... 2,303.89

Elevation to road junction..... 2,287

Abney, 0.8 mile south of, 0.25 mile north of road junction, 150 feet northwest of house, at foot of large stump; chiseled cross on rock, marked "2621"..... 2,610.54

Abney, 0.3 mile north of, on west edge of road, in large flat sandstone rock; bronze tablet stamped "2591"..... 2,590.809

Pemberton, 1.8 miles south of, on hillside sloping to north, on curve of road to east; chiseled cross on rock on west side of road, marked "2639"..... 2,628.85

Pemberton, 300 feet south of post-office, 5 feet east of public road, in sandstone ledge; bronze tablet stamped "2284".. 2,283.655

Feet.

Cedar Station, 0.3 mile south of, in cut, 100 feet north of its end, 5 feet west of track, opposite mouth of Turkey Branch; chiseled cross on rock, marked "2254".....2,254.42

Cedar Station, 0.7 mile north of, 850 feet north of mouth of Craborchard Creek, 7 feet west of Chesapeake & Ohio Ry. track; chiseled cross on rock, marked "2225".....2,225.30

Fitzpatrick, 0.6 mile south of, in east abutment, upper face of bridge over Piney River, west of deep cut, south of track; bronze tablet stamped "2218".....2,218.198

Fitzpatrick, 0.5 mile north of, 500 feet east of culvert over Piney Creek, in curve to north, 7 feet north of track; chiseled cross on rock, marked "2172".....2,171.95

West Raleigh, in front of station; top of rail.....2,122.00

Ghent South 7.2 Miles (Spur Line Run Twice).

Ghent, 1 mile west of, 70 feet west of road to south, 5 feet north of road; chiseled cross on rock, marked "3005" (0.43 foot divergence between these two bench marks)....3,044.42

Ghent, 2.5 miles southwest of, where road crosses Flattop Mountain, west side of road; chiseled cross on rock, marked "3250".....3,249.09

Ghent, 3.5 miles south of, 100 feet south of road forks, west side of road; chiseled cross on large flat rock, marked "3245".....3,244.47

Ghent, 4.7 miles south of, at sharp turn to west, on east side of road; chiseled cross on large black boulder, marked "3063".....3,062.40

Ghent, 4.3 miles south of, 700 feet south of deserted house, east side of road, in large boulder; bronze tablet stamped "3159".....3,157.757

Ghent, 5.25 miles south of, 4 feet east of road; chiseled cross on rock, marked "2887".....2,885.80

Ghent, 6.25 miles south of, 20 feet south of road leading to east, east side of road; chiseled cross on rock, marked "2761'.....2,760.60

Ghent, 6.1 miles south of, 500 feet southeast of house, east side of road, at sharp turn to west, in ledge of rock; bronze tablet stamped "2751".....2,749.593

BLUEFIELD QUADRANGLE

Montcalm North Along Norfolk & Western Ry. and Virginian Railway to Giatto.

Feet.

Montcalm, 1.3 miles north of, 85 feet south of mile post 10, 180 feet south of south end of tunnel, 20 feet east of track, in large rock; aluminum tablet stamped "2210"....2,210.375

Rock, in front of station, top of rail.....2.221.1

Rock, 1.8 miles north of, 570 feet north of mile post 13, east side, south end, in top of railroad culvert; aluminum tablet stamped "2277".....2,276.762

Matoaka, 513 feet east of station, in east end of face of south abutment of Virginian Ry. overhead crossing; aluminum tablet stamped "2362".....2,362.448

Matoaka, in front of Norfolk & Western Ry. station, top of rail 2,362.6

Coaldale, 350 feet west of post-office, 125 feet east of telegraph station, north of railroad, in sandstone ledge; aluminum table stamped "2339".....2,339.416

Coaldale, 0.4 mile east of, at top of divide over long tunnel, 12 feet south of property line post in center of divide; top of rail section.....2,652.00

Ruth, in front of station; top of rail.....2,392.3

Ruth, 0.6 mile east of, on southeast corner of concrete foundation for block signal; chiseled square.....2,358.23

Cooper, 300 feet west of tunnel, on north end of east abutment of railroad bridge 854; chiseled square.....2,309.28

Bluestone, in front of station; top of rail.....2,285.3

Bluestone, in north end of east abutment of railroad bridge 851; aluminum tablet stamped "2283".....2,283.248

Nemours, road crossing at mail crane; top of rail.....2,296.5

Nemours, 300 feet west of mile post 372, in north end of east abutment of railroad bridge 848; aluminum tablet stamped "2300" 2,299.616

Flattop, 300 feet west of mile post 371, on north end of east abutment of railroad bridge 844; chiseled square.....2,309.10

Cooper Northeast Along Norfolk & Western Railway to Montcalm.

Cooper, 300 feet west of tunnel, on north end of east abutment of railroad bridge 854; chiseled square marked "No. 44 U. S. B. M. 2309".....2,309.382

Feet.

Cooper, 0.6 mile north of, 60 feet north of mile post, 2.4 feet west of track, in side cut; marked square on top of rock..2,264.53

Bramwell, in front of station; top of rail.....2,252.7

Simmons, in front of station; top of rail.....2,249.6

Simmons, 0.1 mile north of, 20 feet east of track, in top of northwest foundation of water tank; aluminum tablet stamped "2247".....2,247.330

Flipping, 0.2 mile south of, in top of west abutment on north side of highway bridge over Bluestone River; aluminum tablet stamped "2225".....2,224,777

Flipping, in front of station sign; top of rail.....2,220.9

Montcalm, opposite station; top of rail.....2,213.8

Giatto, in front of station; top of rail.....2,373.1

Giatto, 1.1 miles west of, 55 feet west of mile post 18, 6 feet south of Norfolk & Western Ry., in top of Rock; aluminum tablet stamped "2417".....2,416.932

Clark, in south foundation pier of Virginian Ry. water tank; aluminum tablet stamped "2487".....2,487.121

Clark, in front of station; top of rail.....2,522.

Clark, 0.7 mile northwest of, 8 feet west of railroad, on sandstone ledge; chiseled square.....2,466.93

Clark, 3 miles northwest of, 930 feet west of the west end of Micajah Tunnel of Virginian Ry., 15 feet south of railroad, 5 feet south of stone culvert, in sandstone ledge; aluminum tablet stamped "2239 1909".....2,238.689

MULLENS QUADRANGLE.

Point 2.5 Miles South of Pineville East to Virginian Railway at 2.3 Miles South of Mullens.

Pineville, 3.5 miles east of, south side of road, 600 feet west of Sugar Creek, just east of small drain; cross on large flat rock.....1,334.80

Pineville, 5 miles east of, 15 feet southwest of bend in road where it rounds end of spur, about 0.25 mile south of school house, on rock; aluminum tablet stamped "1378"..1,378.431

Pineville, 5.3 miles east of, north side of road by gate, 100 feet southwest of house; cross on rock.....1,358.02

Pineville, 8 miles east of, about 300 feet east of trail to south over river, 8 feet north of road, in rock; aluminum tablet stamped "1369".....1,369.643

Feet.

Pineville 10.2 miles east of, 2 feet south of road, about 200 feet southwest of Dogwood Spring; cross on rock.....1,388.57

Pineville, 10.5 miles east of, 10 feet south of road, 50 feet south of large chestnut tree, 200 feet west of bridge; nail in root of maple tree (railroad bench mark).....1,383.78

Pineville, 11.4 miles east of, south end of east abutment to Virginian Ry. bridge over Barker Creek, about 450 feet west of main line of railroad, in top face; aluminum tablet stamped "1396".....1,396.401

Mullens South Along Virginian Railway to Herndon.

Mullens, 3.5 miles south of, 12 feet south of Virginian Ry. track, in sharp curve to left; oval on large flat rock.....1,460.96

Mullens, 4.8 miles south of, at Taft's siding, 3.5 feet west of Virginian Ry. track, on top face of northwest abutment to railroad bridge over Barker Creek; cross in concrete....1,518.02

Bud, 400 yards southeast of post-office, 12 feet southeast of Virginian Ry. track, on top face of southeast abutment to railroad bridge over Barker Creek, in concrete; aluminum tablet, stamped "1593".....1,593.846

Bud, 3.1 miles south of, 6 feet north of Virginian Ry. track; cross on ledge of rock.....1,778.44

Herndon, about 500 feet northwest of water tank, 10 feet south of Virginian Ry. track, in top face of southeast abutment of railroad bridge over creek, in rock; aluminum tablet stamped "1878".....1,878.625

Mullens Northeast Along Virginian Railway to Tams (Gulf Post-Office.)

Mullens, at bank building, top of north stone banister of steps of bank entrance, in rock; aluminum tablet stamped "1418".....1,418.692

Mullens, 3.1 miles east of, 5 feet south of railroad, about 2 feet below level of same, on lower face of southwest abutment to culvert, in concrete; aluminum tablet stamped "1474".....1,474.484

Mullens, 3.8 miles east of, 6 feet south of railroad, southeast corner of truss over Allen Fork; top of bolt through guard rail.....1,492.91

Mullens, 7.2 miles east of, 8 feet west of railroad, about 300 feet north of old splash dam in ledge of rock; aluminum tablet stamped "1561".....1,561.186

Feet.

Mullens, 10.8 miles northeast of, 15 feet west of Virginian Ry. track, about 0.25 mile north of Berry ridge, in rock on bank; aluminum tablet stamped "1648".....1,648.355

Tams (Gulf post-office), 40 feet west of station platform, 200 feet north of truss over Bailey Branch, about 6 feet above track, in wall of rock; aluminum tablet, stamped "1735"..1,735.654

Mullens North Along Virginian Railway to Lester.

Mullens, 3.8 miles north of, northwest corner of top step to northeast abutment of bridge over Slab Fork, about 200 feet north of tunnel.....1,560.63

Maben, 60 feet southeast of station, in end of concrete water conveyor from mill pond; bronze tablet stamped "1586"..1,586.595

Maben, 2.8 miles north of, southeast abutment of bridge over Old Slab Fork; southeast corner to third step down.....1,673.60

Maben, 2.8 miles north of, 8 feet south of railroad, on second step down of southeast abutment of bridge over Old Slab Fork, in rock; bronze tablet, stamped "1673".....1,674.110

Slab Fork, in front of station; top of rail.....1,904.

Slab Fork, 1 mile north of, about 250 yards south of switch, 6 feet east of railroad track; cross on ledge of rock, marked "1986".....1,986.93

Lester, 120 feet west of railroad, about 400 feet southwest of station, north side of street, in store building; bronze tablet stamped "2030".....2,030.713

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